

SCAG[®]

POWER EQUIPMENT

MODEL SWZ



THIS MANUAL CONTAINS THE OPERATING INSTRUCTIONS AND SAFETY INFORMATION FOR YOUR SCAG MOWER. READING THIS MANUAL CAN PROVIDE YOU WITH ASSISTANCE IN MAINTENANCE AND ADJUSTMENT PROCEDURES TO KEEP YOUR MOWER PERFORMING TO MAXIMUM EFFICIENCY. THE SPECIFIC MODELS THAT THIS BOOK COVERS ARE CONTAINED ON THE INSIDE COVER. BEFORE OPERATING YOUR MACHINE, PLEASE READ ALL THE INFORMATION ENCLOSED.

OPERATOR'S MANUAL



WARNING:

FAILURE TO FOLLOW SAFE OPERATING PRACTICES MAY RESULT IN SERIOUS INJURY.

- * Keep all shields in place, especially the grass discharge chute.
- * Before performing any maintenance or service, stop the machine and remove the spark plug wire and ignition key.
- * If a mechanism becomes clogged, stop the engine before cleaning.
- * Keep hands, feet and clothing away from power-driven parts.
- * Read this manual completely as well as other manuals that came with your mower.
- * Keep others off the tractor (only one person at a time)

REMEMBER - YOUR MOWER IS ONLY AS SAFE AS THE OPERATOR!

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the equipment.

This manual covers the operating instructions
and illustrated parts list for:

SWZ36A-15KA	with a serial number of 8110001 to 8119999
SWZ48A-17KA	with a serial number of 8120001 to 8129999
SWZ48A-17KAE	with a serial number of 8130001 to 8139999
SWZ52A-17KA	with a serial number of 8140001 to 8149999
SWZ52A-18KH	with a serial number of 8150001 to 8159999
SWZ-17KA	with a serial number of 8200001 to 8209999
SWZ-21KAE	with a serial number of 8210001 to 8209999
SWM-52A	with a serial number of 8220001 to 8229999
SWM-61A	with a serial number of 8230001 to 8239999

Always use the entire serial number listed on the serial number tag when referring to this product.

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POWER EQUIPMENT

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GENERAL INFORMATION

INTRODUCTION

Your mower was built to the highest standards in the industry. However, the prolonged life and maximum efficiency of your mower depends on you following the operating, maintenance and adjustment instructions in this manual.

If additional information or service is needed, contact your Scag Power Equipment Dealer.

We encourage you to contact your dealer for repairs. All Scag dealers are informed of the latest methods to service this equipment and provide prompt and efficient service in the field or at their service shop. They carry a full line of Scag service parts.

USE OF OTHER THAN ORIGINAL SCAG REPLACEMENT PARTS WILL VOID THE WARRANTY.

For pictorial clarity, some illustrations and figures in this manual may show shields, guards or plates open or removed. Under no circumstances should your mower be operated without these devices in place.

All information is based upon product information available at the time of approval for printing. Scag Power Equipment reserves the right to make changes at any time without notice and without incurring any obligation.

Use only Scag approved attachments and accessories.

Scag Approved Attachments:

GC-F4

GC-4D

Scag Approved Accessories:

Mulch Plate

Mulch Master

Cup Holder

EZ-Grip

Turbo Baffle

Blade Buddy

Using unapproved attachments, (especially "stand-up" riding attachments) may be hazardous.

DIRECTION REFERENCE

The "Right" and "Left", "Front" and "Rear" of the machine are referenced from the operator's right and left when seated in the normal operating position and facing the forward travel direction.

SERVICING THE ENGINE AND DRIVE TRAIN COMPONENTS

The detailed servicing and repair of the engine and hydraulic pumps are not covered in this manual; only routine maintenance and general service instructions are provided. For service of these components during the limited warranty period, it is important to contact your Scag dealer or find a local authorized servicing agent of the component manufacturer. Any unauthorized work done on these components during the warranty period may void your warranty.



ISO Symbols



CE Mark

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Choke		Transmission
	Parking Brake		Spinning Blade
	On/Start		Spring Tension on Idler
	Off/Stop		Oil
Falling Hazard			

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Fast		Slow
	Continuously Variable - Linear		Cutting Element - Basic Symbol
	Pinch Point		Cutting Element - Engage
	Hourmeter/Elapsed Operating Hours		Cutting Element - Disengage
	Thrown Object Hazard Keep Bystanders Away		Read Operator's Manual

SAFETY INFORMATION

GENERAL SAFETY INFORMATION

Your mower is only as safe as the operator.
Carelessness or operator error may result in serious bodily injury or death. Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of the personnel involved in the operation, transport, maintenance and storage of the equipment. Make sure every operator is properly trained and thoroughly familiar with all of the controls before operating the mower.

READ THIS OPERATOR'S MANUAL BEFORE ATTEMPTING TO START YOUR MOWER.

A replacement manual is available from your authorized Scag Service Dealer or by contacting Scag Power Equipment, Service Department at P.O. Box 152, Mayville, WI 53050 or contact us via the Internet at www.scag.com. Use the contact form to make your request. Please indicate the complete model and serial number of your Scag product when requesting replacement manuals.

SIGNAL WORDS



This symbol means **“Attention! Become Alert! Your Safety is Involved!”** The symbol is used with the following signal words to attract your attention to safety messages found on the decals on the machine and throughout this manual. The message that follows the symbol contains important information about safety. To avoid injury and possible death, carefully read the message! Be sure to fully understand the causes of possible injury or death.

Signal Word:

The signal word is a distinctive word found on the safety decals on the machine and throughout this manual that alerts the viewer to the existence and relative degree of the hazard.

DANGER:

The signal word “DANGER” denotes that an extremely hazardous situation exists on or near the machine that could result in high probability of death or irreparable injury if proper precautions are not taken.

WARNING:

The signal word “WARNING” denotes that a hazard exists on or near the machine that can result in injury or death if proper precautions are not taken.

CAUTION:

The signal word “CAUTION” is a reminder of safety practices on or near the machine that could result in personal injury if proper precautions are not taken.

Your safety and the safety of others depends significantly upon your knowledge and understanding of all correct operating practices and procedures of this machine.

BEFORE OPERATION CONSIDERATIONS

1. **NEVER** allow children to operate this machine. Do not allow adults to operate this machine without proper instructions.
2. **DO NOT** mow when children and/or others are present.
3. Clear the area to be mowed of objects that could be picked up and thrown by the cutter blades.
4. **DO NOT** wear loose fitting clothing that could get tangled in moving parts. Do not operate the machine wearing shorts; always wear adequate protective clothing including long pants. Wearing safety glasses, safety shoes and a helmet is advisable and is required by some local ordinances and insurance regulations.

BEFORE OPERATION CONSIDERATIONS (CONT'D)

5. Operator hearing protection is recommended, particularly for continuous operation of the mower. Wear suitable hearing protection. Prolonged exposure to loud noise can cause hearing impairment or hearing loss.
6. Keep the machine and attachments in good operating condition. Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, repair or replace it before operating the machine.

WARNING:

This machine is equipped with an interlock system intended to protect the operator and others from injury. This is accomplished by preventing the engine from starting unless the deck drive is disengaged, the parking brake is on, and the speed adjustment lever is in the neutral position. The system shuts off the engine if the operator releases the operator presence levers with the deck drive engaged and/or the speed adjustment lever not in the neutral position, or the parking brake disengaged. Never operate equipment with the interlock system disconnected or malfunctioning.

7. Gasoline is highly flammable, handle it carefully. Fill the fuel tank outdoors. Never indoors. Fill the fuel tank with clean, fresh gasoline, with a minimum octane rating of 87. Use a funnel or spout to prevent spillage.
 - A. Use an approved gasoline container.
 - B. **DO NOT** add fuel to a running or hot engine. Allow the engine to cool for several minutes before adding fuel.
 - C. Keep flammable objects (cigarettes, matches, etc.), open flames and sparks away from the fuel tank and fuel container.
 - D. Fill the fuel tank outdoors and up to approximately 1" (25 mm) below the bottom of the filler neck.
 - E. Wipe up any spilled gasoline.

8. Before attempting to start the engine, move the speed adjustment lever into the neutral position, move the blade engagement switch to the OFF position, apply the parking brake, and move the neutral latches to neutral.

WARNING

DO NOT OPERATE WITHOUT DISCHARGE CHUTE, MULCHING KIT, OR ENTIRE GRASS CATCHER INSTALLED

9. The discharge chute must always be installed and in the down position on the side discharge cutter deck except when the Scag optional grass catcher or mulching plate are properly installed.

DANGER:

ROTATING BLADES

NEVER PUT YOUR HANDS INTO THE DISCHARGE CHUTE FOR ANY REASON! Shut off the engine and remove the key and only then use a stick or similar object to remove material if clogging has occurred.

10. If the mower discharge ever plugs, shut off the engine, remove the ignition key, and wait for all movement to stop before removing the obstruction. Do not use your hand to dislodge the clogged discharge chute. Use a stick or other device to remove clogged material.
11. Check the blade mounting bolts at frequent intervals for proper tightness.
12. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting the machine.

OPERATION CONSIDERATIONS

1. Know the function of all controls and how to stop quickly.
2. Start the engine when the neutral latches are in the neutral lock position, the cutter blades are disengaged, the parking brake is on and the speed adjustment lever is in the neutral position.
3. Be sure the interlock switches are functioning correctly.
4. Using the machine demands attention. To prevent loss of control:
 - A. Mow only in daylight or when there is good artificial light.
 - B. Watch for holes or other hidden hazards.
 - C. Do not drive close to a drop-off, ditch, creek bank, or other hazard.
 - D. Reduce speed when making sharp turns and when turning on hillsides.
 - E. Always be sure of your footing. Keep a firm hold on the handles and walk---never run.
 - F. Do not operate where conditions are slippery

WARNING:

DO NOT operate on steep slopes. To check a slope, attempt to back up it (with the cutter deck down). If the machine can back up the slope without the wheels slipping, reduce speed and use extreme caution. ALWAYS FOLLOW OSHA APPROVED OPERATION.

5. Disengage power to the cutter deck before backing up. Do not mow in reverse unless absolutely necessary and then only after observation of the entire area behind the mower.
6. Disengage power to the cutter deck before crossing roads, walks or gravel drives.

7. Shut the engine off and wait until the blades come to a complete stop before removing the grass catcher container.
8. Never raise the cutter deck while the blades are rotating.



DANGER: ROTATING BLADES

NEVER PUT YOUR HANDS INTO THE DISCHARGE CHUTE FOR ANY REASON!

9. **DO NOT** operate without the side discharge chute installed and in the down position.
10. **DO NOT** direct the discharge of material toward bystanders or allow anyone near the machine while in operation.
11. If the cutting blades should strike a solid object or the equipment should start to vibrate abnormally, stop the engine, disconnect the spark plug wire, and check immediately for the cause. Vibration is generally a warning of trouble. Check the machine for damaged or defective parts. Repair any damage before starting the engine or operating the cutter deck. Be sure the blades are in good condition and the blade bolts are tight.
12. Take all possible precautions when leaving the machine unattended, such as disengaging the mower, setting the parking brake, stopping the engine, and removing the key.
13. **DO NOT** touch the engine or the muffler while the engine is running or immediately after stopping. These areas may be hot enough to cause a burn.
14. **DO NOT** run the engine inside a building or a confined area without proper ventilation. Exhaust fumes are hazardous and could cause death.

MAINTENANCE AND STORAGE

1. Allow only trained personnel to service the machine.
2. Never make adjustments to the machine with the engine running unless specifically instructed to do so. If the engine is running, keep hands, feet, and clothing away from moving parts.
3. Remove the key from the ignition switch and disconnect the wire from the spark plug(s) to prevent accidental starting of the engine when servicing, adjusting or storing the machine.
4. If the mower must be tipped to perform maintenance or adjustment, remove the battery, drain the gasoline from the fuel tank and the oil from the crankcase.
5. Be sure the machine is in safe operating condition by keeping nuts, bolts, and screws tight. Check the blade mounting bolts and nuts frequently to be sure they are tightened.
6. Do not change the engine governor settings or overspeed the engine. See the engine operator's manual for information on engine settings.
7. To reduce fire hazard, keep the engine free of grass, leaves, excessive grease, oil and dirt.
8. The engine must be shut off before checking the oil or adding oil to the crankcase.
9. Allow the engine to cool before storing the mower in any enclosure such as a garage or storage shed. Make sure the fuel tank is empty if the machine is to be stored in excess of 30 days. Do not store the mower near any open flame or where gasoline fumes may be ignited by a spark.
10. Always store gasoline in a safety-approved, red container.
11. Be careful when servicing the battery as it contains acid, which is corrosive and could cause burns to skin and clothing.
12. Batteries release explosive gases when being charged or discharged. Keep batteries away from any source of sparks and/or flame.
13. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting the machine.
14. **Hydraulic fluid is under high pressure.** Keep body and hands away from pinholes or nozzles that eject hydraulic fluid under high pressure. If you need service on your hydraulic system, please see your authorized Scag dealer. Hydraulic fluid under high pressure may have sufficient force to penetrate skin and cause serious injury. If hydraulic fluid is injected into the skin, it must be surgically removed within a few hours by a doctor or gangrene may result.

INITIAL RUN-IN PROCEDURES (FIRST DAY OF USE OR APPROXIMATELY 10 HOURS)

1. Check the belts for proper tension at 2, 4 and 8 hours. Adjust as needed.
2. Check the steering control rods and the speed control for neutral adjustment. (See Adjustments, page 12-13)
3. Check the tires for proper pressure.

Caster Wheels	25 psi.
Drive Wheels	12 psi.
4. Check for loose hardware. Tighten as needed.
5. Check the safety switches for proper adjustment:
 - * On electric start machines the engine should crank and start if the machine is in neutral, the PTO engagement switch is OFF and the parking brake is ON.
6. Apply lubricant to all the grease fittings. Lubricant was applied at the factory. This is just a precautionary check to make sure that all the fittings have been lubricated.

MOWER OPERATION

1. Read and understand the safety instructions before attempting to operate this machine.

2. Before starting the engine:

- * Check the oil level in the engine and the hydraulic reservoir.
- * Fill the fuel tank with clean, fresh, lead-free gasoline.
- * Open the fuel valve on the bottom of the fuel tank.

-NOTE-

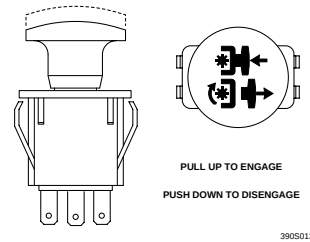
Use gasoline with an octane rating no less than 87.

- * The speed adjustment lever must be in NEUTRAL.
- * The blade clutch switch must be in the OFF position.
- * The neutral latches must be in the neutral lock position.
- * The key switch must be on.
- * The parking brake must be on.

3. Start the engine:

- * Choke as required. If the engine is cold, pull the choke knob out. When the engine starts, slowly push the choke in. If the engine stalls, repeat the above operation. When the engine is warm, choking may not be necessary.
- * Cold starting. In the spring and fall when the morning temperatures are cool it may be difficult to start the machine due to the parastatic load from the hydraulic drive. To relieve this load, pull out and up on the de-clutch chain located on the right side of the machine behind the tire. This will allow you to start the engine easily. When the engine is warmed up, slowly release the de-clutch chain to engage the hydraulic system.

4. Engage the cutter blades by pulling the blade clutch switch into the ON position. Push the switch to the OFF position to disengage the cutter blades.



-NOTE-

When PTO is engaged or (possibly) disengaged, a squealing sound from the underside of the machine is normal. It is caused by the electric clutch plates meshing as the mower comes up to speed. For best equipment life, engage the clutch with the engine at 3/4 throttle, not under full load.



WARNING:

If you are not familiar with the operation of the hydrostatic drive and zero turn feature, practice turning and maneuvering with the hand controls before engaging the blades.

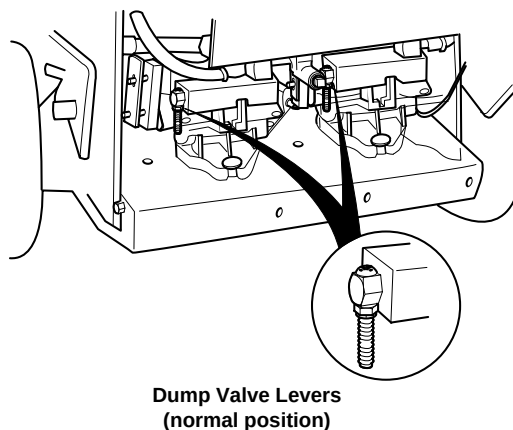
5. Release the parking brake. Move the speed adjustment lever to the desired mowing speed.

-NOTE-

Top speed is suggested only for transport!

6. While squeezing the steering brake levers with both hands, release both neutral latches.
7. When the steering brake levers are released, the machine will travel straight. To make a right turn, squeeze the RH lever. To turn left, squeeze the LH lever.
8. TO STOP, squeeze both levers, lock the neutral latches, and move the speed adjustment lever to neutral.
9. To move the machine in reverse, squeeze up on both steering control levers.

- To "freewheel" or move the machine around without the engine running, turn the dump valve levers located at the back of the pumps to the "freewheel" positions (see Figure 1). To operate the machine, the dump valve levers must be returned to the closed positions.



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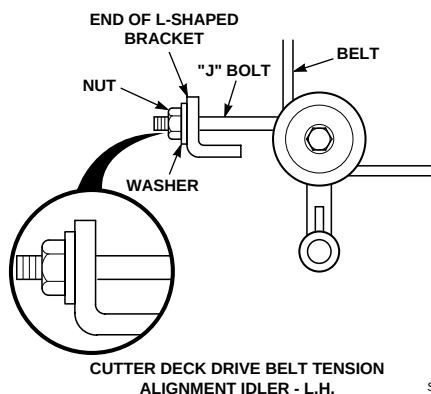
Figure 1. Dump Valves

CUTTER DECK BELT ADJUSTMENTS

-NOTE-

The hydro drive belt is spring loaded and does not require adjustment.

- Remove the belt cover.
- Adjust the cutter deck drive belt using a belt tension gauge. Adjust the belt so that the belt moves 1/2" with 10 pounds of pressure. Adjust the tension by tightening or loosening the J-bolt nut. (See Figure 2)



SC400G

Figure 2. Deck Drive Belt Adjustment

-NOTE-

Due to initial belt stretch and to prevent the belt from slipping, check this adjustment after the first 2 hours, 4 hours and 8 hours of operation.

- Adjust the RH blade drive belt using a belt tension gauge. Adjust the belt so that the belt moves 1/2" with 10 pounds of pressure. Adjust the tension by tightening or loosening the J-bolt nut. (See Figure 3)
- Replace the belt cover.

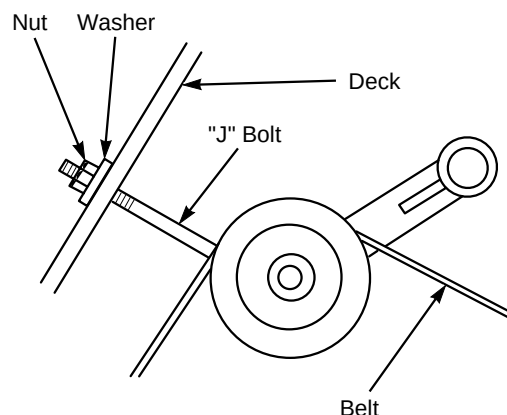


Figure 3. Cutter Deck Belt Adjustment R.H.

CUTTER DECK ADJUSTMENTS

Due to the many cutting conditions that exist, it is difficult to suggest a cutter deck setting that will work for every lawn. There are two adjustments that can be made on these decks, pitch and height.

PITCH is the angle of the blades (comparing front to rear). A 1/4" downward pitch (front of deck down) is recommended for best cutting performance.

HEIGHT is the nominal distance the blade is off of the ground. This measurement is made with the blades pointed side to side and distance is measured between cutting tip and ground. (Also see Blade Height Adjustment)

Changes to the cutting height can be achieved by repositioning the cutter deck. (This adjustment will also effect the pitch of the deck). There are three available positions (see Figure 4).

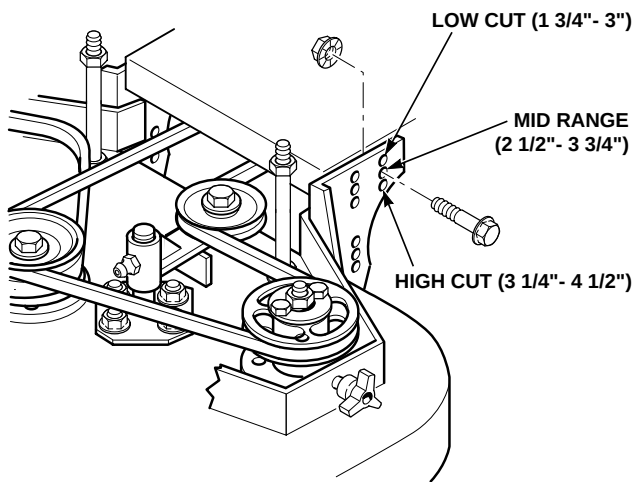


Figure 4. Cutting Height Adjustment

Caster spacers also can be repositioned to change cutting heights and to change the pitch of the deck. (See Figure 5)

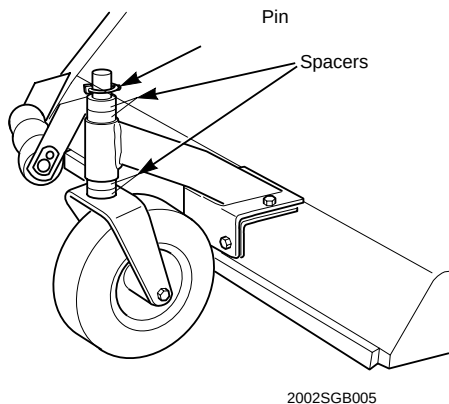


Figure 5. Caster Wheel Spacers

BLADE HEIGHT ADJUSTMENT

Adjusting the blade height can be done by moving any number of the five smaller 1/4" spacers on the blade mounting bolts to the top of the spindle shaft or below the spindle shaft.

-NOTE-

All blades should be positioned equally.

For best cut and discharge, a minimum of three spacers should be installed between the blade and the spindle (See Figure 6)



WARNING:

Always wear proper hand and eye protection when working with cutter blades.

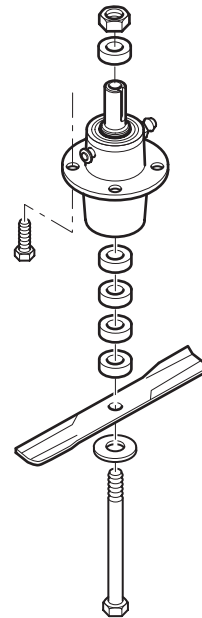


Figure 6. Blade Spacers

CUTTER BLADES

Do not sharpen beyond 1/3 of the width of the blade. (See Figure 7)

-NOTE-

Dress the blade with a file. Using a wheel grinder may burn the blade. Check the balance of the blade. If blades are out of balance, vibration and premature wear of spindle assembly can occur. See your authorized Scag dealer for blade balancing or special tools, if you choose to balance your own blades.

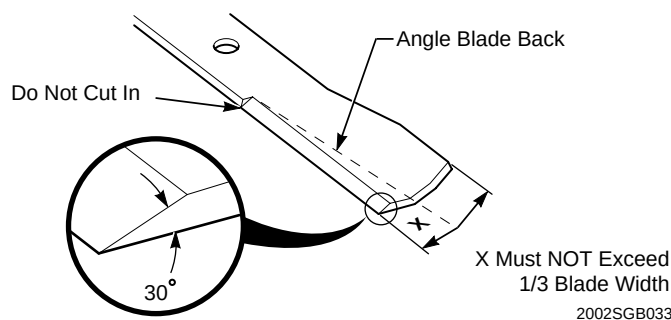


Figure 7. Blade Sharpening

Custom-Cut Baffle Adjustment

The Custom-Cut Baffle is designed to deliver optimum airflow and superior cutting performance in any type of grass. The Custom-Cut Baffle can be raised or lowered to precisely tailor the deck's performance for the type of grass being cut. The baffle can be set in three (3) different positions for optimum performance.

- A. 3" Position - baffle removed. (See Figure 9). With the baffle removed, the Advantage cutter deck will deliver the best quality-of-cut in very tall, wiry, tough to cut grass.
- B. 3-1/2" Position (factory setting) - baffle is installed using the bottom set of holes on the Custom Cut Baffle. (See Figure 10). For general purpose cutting, place the Custom Cut Baffle in the 3-1/2" position. This gives the best mix of cutting performance in all types of grass.
- C. 4" Position - baffle is installed using the top set of holes on the Custom Cut Baffle. (See Figure 11). Placing the baffle in the 4" setting will enhance fall cutting (leaf pickup) and reduce cutter deck "blowout".

To Adjust the Custom-Cut Baffle height:

1. Remove the hardware securing the Custom-Cut Baffle to the cutter deck (See Figure 8).

-NOTE-

Hardware location used in the illustrations are for reference only. Location of hardware may vary depending on the cutter deck size.

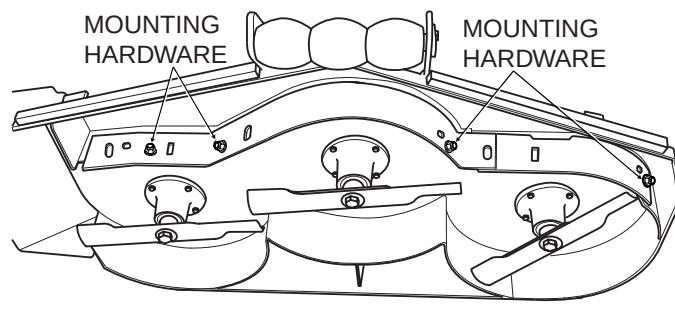


Figure 8. Custom Cut Baffle

2. Move the Custom-Cut Baffle to desired position. (See Figures 9 through 11 for position)
3. Reinstall the mounting hardware as shown. (See Figures 10 through 11). Torque hardware to 39ft.lbs.

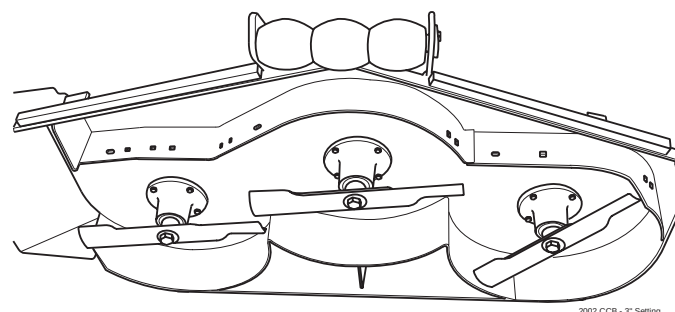


Figure 9. 3" Custom Cut Baffle Position

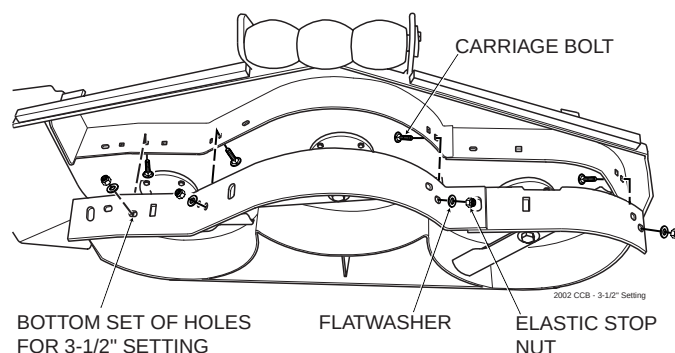


Figure 10. 3-1/2" Custom Cut Baffle Position

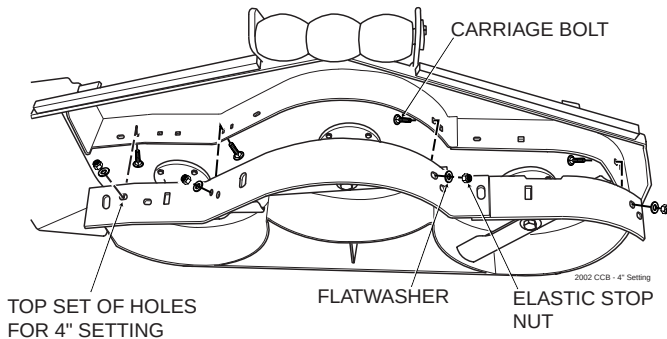


Figure 11. 4" Custom Cut Baffle Position

NEUTRAL ADJUSTMENT

-NOTE-

Neutral has been set by your Scag dealer at the time of setup and normally does not need to be adjusted. If, however, you find that the neutral has come out of adjustment follow the procedure below.

1. Raise the drive wheels off the ground and block the caster wheels.
2. Make sure the speed control lever is in neutral, the steering control levers are in the neutral latch position, and the parking brake is on. Start the engine.
3. Release the parking brake and note if the tires are rotating.
4. Starting on the left side of the machine, rotate the tracking adjustment knob counter clockwise just until the LH wheel starts to creep forward. Make a note of the position of the adjusting knob. (See Figure 12)
5. Turn the adjusting knob clockwise just until the wheel turns rearward. Make a note of the position of the adjusting knob. To adjust neutral, split the difference between the two noted positions of the adjusting knob.
6. Turn the engine off.

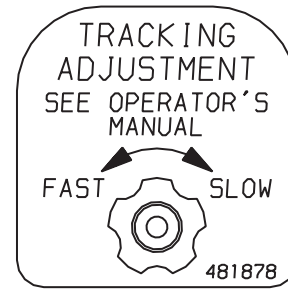


Figure 12. Neutral Adjustment

STEERING CONTROL ROD ADJUSTMENT

-NOTE-

This adjustment is made to allow the steering control levers to be moved out of the neutral latch without engaging reverse.

Before making this adjustment be sure that the speed control bearing is just touching the speed control cam and that the bellcrank bearing is resting in the center groove of the neutral cam.

1. Remove the speed control spring. Remove the steering control rod swivel hair pin. Check the location of the swivel in the slotted hole in the bell crank.
2. Turn the swivel joint on the steering control rods until the swivel joint is centered in the slot in the bellcrank.

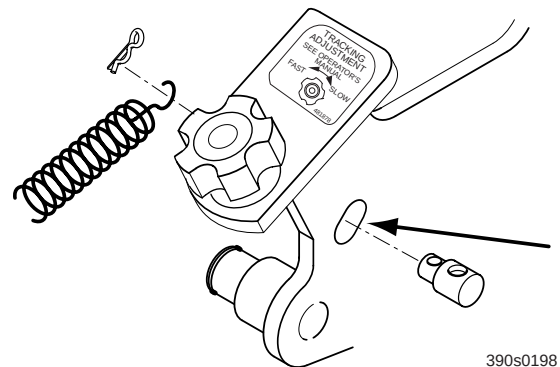


Figure 13. Control Rod Adjustment

3. Reinstall the speed control spring onto the swivel. Install the hair pin onto the swivel. (See Figure 13)

TRACKING ADJUSTMENT

-NOTE-

Before proceeding with this adjustment, be sure that the tire pressures are correct. (see page 7) and that the neutral adjustment and the steering control rod adjustment have been completed.

1. With the machine on a flat level surface, start the engine and place the speed adjustment lever into the speed that will most often be used.
2. Squeeze the steering control levers and release the neutral latch. Slowly release the steering control levers, allowing the machine to move forward.
6. Repeat steps 1 and 2. If the machine continues to pull to one side. Stop the mower by placing the steering control levers in the neutral position, and turn the tracking adjustment knob on the faster side clockwise until the machine tracks straight.
7. If tracking cannot be achieved, contact your Scag servicing dealer.

WARNING:

BEFORE ATTEMPTING TO MAKE ANY TRACKING ADJUSTMENTS:

1. Move the speed adjustment lever to the neutral position.
2. Place the blade engagement switch in the OFF position.
3. Apply the parking brake.
4. Move the steering control levers into the neutral position.
3. If the machine pulls to one side. Stop the mower by placing the steering control levers in the neutral position. Turn the tracking adjustment knob on the slower side counter clockwise until the machine tracks straight. (See Figure 14)
4. Bring the steering control levers back to the neutral lock position and check to see that the machine does not creep forward on the adjusted wheel.
5. If the machine creeps in neutral you have moved out of the neutral band and will have to turn the tracking adjustment knob clockwise until the machine does not creep.

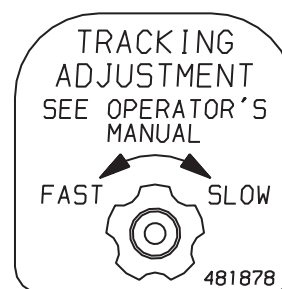


Figure 14. Tracking Adjustment

PARKING BRAKE

1. Adjust the parking brake so that when the brake hand lever is against the stop on the handle bar, the brake levers on the brake shaft weldment are against the stops on the engine deck.

CAUTION:

Adjust the brake only enough to hold the machine. Excessive force may cause damage to the machine or brake components.

2. Adjust the brake actuator rod on either side of the machine to obtain proper brake adjustment.

LUBRICATION & MAINTENANCE

BREAK-IN			
8 HOURS (DAILY)			
40 HOURS (WEEKLY)			
100 HOURS (BIWEEKLY)			
500 HRS OR ANNUALLY			
		PROCEDURE	COMMENTS
X	X	Check all hardware for proper tightness Change engine oil and filter at 5 hours	
X	X	Check engine oil	Do not over fill
X	X	Remove debris from under belt cover	More often if needed
X	X	Sharpen cutter blades	More often if needed
X	X	Grease spindle bearings	+ US Lithium MP White Grease 2125
X	X	Clean air filter	More often if needed
X	X	Check belt tension	Adjust as needed
X	X	Check tire pressure	Add or adjust as required
X	X	Check battery level	Adjust as needed
X	X	Replace air filter	More often if needed
X	X	Grease caster wheel bearings	Chassis grease
X	X	Grease caster wheel pivot shafts	Chassis grease
X	X	Grease idler pulley bracket on cutter deck	Chassis grease
X	X	Change hydrostatic oil filter	Clean area before removing the filter
X	X	Change engine oil and filter	See engine manufacturer information
X	X	Grease idler arm pivots	Chassis grease
X	X	Grease brake hand lever	Chassis grease
X	X	Grease brake actuator levers	Chassis grease
X	X	Check all hardware for proper tightness	
X	X	Adjust air gap on electric clutch	Contact your Scag dealer for information about making this adjustment.
X	X	Drain hydraulic system and replace oil	

+ Grease spindle until grease comes out the relief valve

Compatible Greases:

Lidok EP #2 (found at industrial shops)

Ronex MP (Exxon service stations)

Shell Alvania (Shell service stations)

Mobilux #2 (Mobil service stations)

Super Lub M EP #2 (Conoco service stations)

HYDRAULIC SYSTEM

Checking Hydraulic Oil Level

The hydraulic oil level should be checked after the first 10 hours of operation. Thereafter, check the oil every 200 hours of machine operation or monthly, whichever occurs first.

-IMPORTANT-

If the oil level is consistently low, check for leaks and correct immediately.

1. Wipe dirt and contaminants from around the reservoir cap. Remove the cap from the hydraulic oil reservoir.
2. Visually check the level of hydraulic oil. Hydraulic oil must be at least 2" inches from top of the filler neck. If the level cannot be determined visually, use a clean tape measure to check the level. If the fluid is low, add 20W50 motor oil. DO NOT overfill; (overfilling the oil reservoir may cause oil seepage around the cap area).
3. Clean the fill cap and install it onto the reservoir.

Changing Hydraulic Oil

The hydraulic oil should be changed after every 500 hours or annually, whichever occurs first. The oil should also be changed if the color of the fluid has become black or milky. A black color and/or a rancid odor usually indicates possible overheating of the oil, and a milky color usually indicates water in the hydraulic oil.

-NOTE-

The hydraulic oil should be changed if you notice the presence of water or a rancid odor to the hydraulic oil.

1. Park the mower on a level surface and stop the engine.

2. Place a suitable container under the hydraulic oil drain. Remove the fill cap from the reservoir. Remove the drain cap from the T-Fitting located on the hydraulic system filter head. (See Figure 14). Allow the fluid to drain into the container and properly discard it.

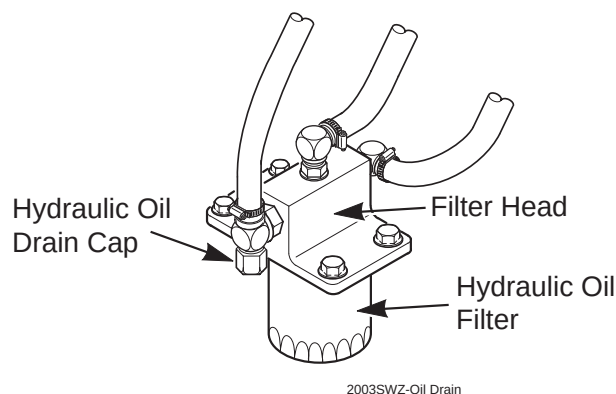


Figure 14 Hydraulic Oil Drain Cap

3. Reinstall the drain cap onto the T-Fitting and be sure it is tight.

-NOTE-

Before refilling the hydraulic oil reservoir the hydraulic oil filter should be changed as well. See instructions outlined below.

4. Fill the reservoir to 2" inches from the top of the filler neck with 20W50 motor oil.
5. Replace the reservoir fill cap. Start the engine and drive forward and backward for two minutes. Check the oil level in the reservoir. If necessary, add oil to the reservoir.

Changing Hydraulic Oil Filter Element

The hydraulic oil filter should be changed after every 500 hours of operation or annually, whichever occurs first.

1. Remove the oil filter element (Figure 14) and properly discard it. Fill the new filter with clean oil and install the filter. Hand tighten only.

2. Run the engine at idle speed with the speed control lever in neutral for five minutes.
3. Check the oil level in the hydraulic tank. It must be 2" inches from the top of the filler neck. If necessary, add SAE 20W50 motor oil.

Checking Engine Crankcase Oil Level

The engine oil level should be checked after every 8 hours of operation or daily as instructed in the Engine Operator's Manual furnished with this mower.

Changing Engine Crankcase Oil

After the first 5 hours of operation, change the engine crankcase oil and replace the oil filter. Thereafter, change the engine crankcase oil after every 100 hours of operation or bi-weekly, whichever occurs first. Refer to the Engine Operator's Manual furnished with this mower for instructions.

Changing Engine Oil Filter

After the first 5 hours of operation, replace the engine oil filter. Thereafter, replace the oil filter every 200 hours of operation or every month, whichever occurs first. Refer to Engine Operator's Manual for instructions.

Engine Air Cleaner

For any air cleaner, the operating environment dictates how often the air cleaner should be serviced. Refer to the Engine Operator's Manual furnished with this mower for instructions.

-NOTE-

In extremely dusty conditions it may be necessary to service the air cleaner daily to prevent engine damage.

BATTERY (ELECTRIC START UNITS ONLY)

Checking Electrolyte Level and Cleaning Battery

This machine was equipped from the factory with a sealed battery. Maintenance is not required to maintain the electrolyte level. Dirt and fluid on the top of the battery can cause the battery to discharge. Corrosion of the battery terminals or loose connections will cause poor battery performance.



WARNING:

Lead-acid batteries produce flammable and explosive gases. To avoid personal injury when checking, testing or charging batteries, DO NOT use smoking materials near batteries. Keep arcs, sparks and flames away from batteries. Provide proper ventilation and wear safety glasses.



WARNING:

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Wash hands after handling.

1. Loosen the two plastic wing nuts and then remove the battery cover.
2. Clean the cable ends and battery posts with steel wool. Use a solution of baking soda and water to clean the battery. Do not allow the solution to enter the battery cells.
3. Tighten the cable connections securely and apply a light coat of silicone dielectric grease to the terminal connections to prevent corrosion.
4. Install the battery cover.

**WARNING:**

Electric storage battery fluid contains sulfuric acid which is **POISON** and can cause **SEVERE CHEMICAL BURNS**. Avoid contact of fluid with eyes, skin, or clothing. Use proper protective gear when handling batteries. **DO NOT** tip any battery beyond 45 angle in any direction. If fluid contact does occur, follow first aid suggestions below.

BATTERY ELECTROLYTE FIRST AID

EXTERNAL CONTACT - Flush with water.

EYES - Flush with water for at least 15 minutes and get medical attention immediately.

INTERNAL - Drink large quantities of water. Follow with Milk Of Magnesia, beaten egg, or vegetable oil. Get medical attention immediately. In case of internal contact, DO NOT give fluids that would induce vomiting.

**WARNING:**

BATTERIES PRODUCE EXPLOSIVE GASES. Charge the battery in a well ventilated space so gases produced while charging can dissipate.

Charging rates between 3 and 50 amperes are satisfactory if excessive gassing or spewing of electrolyte does not occur or the battery does not feel excessively hot (over 125°F). If spewing or gassing occurs or the temperature exceeds 125°F, the charging rate must be reduced or temporarily stopped to permit cooling.

Jump Starting

1. The booster battery must be a 12 volt type. If a vehicle is used for jump starting, it must have a negative ground system.
2. When connecting the jumper cables, connect the positive cable to the positive battery post, then connect the negative cable to the negative battery post.

Charging the Battery

Refer to the battery charger's manual for specific instructions.

Under normal conditions the engine's alternator will have no problem keeping a charge on the battery. If the battery has been completely discharged for a long period of time, the alternator may not be able to recharge the battery, and a battery charger will be required.

DO NOT charge a frozen battery. It may explode and cause injury. Let the battery warm before attaching a charger.

Whenever possible, remove the battery from the mower before charging.

TECHNICAL SPECIFICATIONS

ENGINES

General Type:	Heavy duty industrial/commercial
Brand:	Kohler, Kawasaki,
Models:	Kohler CV493T, Kawasaki FH451V (15HP), FH500V (17HP) FH641V (21HP)
Horsepower:	Kohler 18HP; Kaw. 15HP; Kaw. 17HP; Kaw. 21HP.
Type:	4 cycle gas, vertical shaft engines
Displacement:	Kohler: 18HP = 490cc Kawasaki: 15HP = 494cc, 17HP = 494cc, 21HP = 675cc.
Cylinders:	Varied - see manufacturer's specifications
Governor:	Mechanical type governor with variable speed control. Settings: Kawasaki 15HP= 3600 rpm (± 75 rpm), idle set at 1200 rpm (± 75 rpm), 17HP & 21HP= 3600 rpm (± 75 rpm), idle set at 1550 rpm (± 75 rpm), Kohler 18HP= 3600 rpm (± 50 rpm), idle set at 1500 rpm (± 75 rpm).
Exhaust Group:	Single & dual exhaust canister muffler
Fuel Pump Group:	Varied - See manufacturer's specifications
Oil Pump Group:	Varied - See manufacturer's specifications
Valve Group:	Varied - See manufacturer's specifications
Starter/Electrical:	Electronic Ignition with recoil starter or 12 volt battery with alternator, solid state ignition with key start
Charging System:	15 amp

ENGINE DECK

Thickness:	7 gauge steel
Fuel Tank:	5 gallon (19.0 litres) seamless polyethylene
Drive Wheels/Tires:	16x6.50-8 four-ply pneumatic tubeless, radius edge
Brakes:	Dynamic braking through hydro drive system
Axles:	1" tapered
Handle Bars:	1-1/4" diameter

DRIVE SYSTEM

Type:	Hydro drive with two variable displacement pumps and two cast-iron high torque motors
Hydro Pumps:	Two Hydro-Gear Model BDP 10L pumps with dump valves for movement without running the engine
Drive Wheel Motors:	Two 12 cu. inch cast-iron high torque motors
Hydro Fluid Cooling Group:	4qt. capacity nylon cooling reservoir, uses, SAE 20W50 fluid and 10 micron filter
Steering / Travel Control::	Independent handle controls for each wheel, squeeze to move from forward to neutral to reverse, neutral lock lever, speed range controlled with single lever (patented design), in-field tracking adjustment with no tools necessary
Parking Brakes:	7.5" drum, band brake, one on each wheel
Dump Valves:	Allows for movement without engine running
Axles:	1" tapered motor shafts
Wire Harness:	14 gauge wire
Safety Group:	Handle actuated operator presence system (patented design), blade / clutch and transmission interlock to engine kill
Forward Speed Range:	0 to 7.4 mph
Reverse Speed Range:	0 to 3.0 mph

Section 3

TECHNICAL SPECIFICATIONS (CON'T)

CUTTER DECKS

Type:	SWM 36 Advantage, SWM 48 Advantage, SWM 52 Advantage, SWM 61 Advantage.
Construction:	Out-front design with anti-scalp rollers
Cutting Width:	SWM36A, 48A: 7-gauge steel with 7-gauge (3/16") steel skirt SWM52A, 61A: 10-gauge steel with 7-gauge (3/16") steel skirt 35.5" (90.2 cm), 48.0 (122.0 cm), 52.0 " (132.0 cm), 61.0 " (155.0 cm).
Cutting Height Adjustment:	Adjustable from 1-3/4" to 4-1/4" in 1/4" increments
Cutter Blades:	Marbain™, .197 thickness SWM 36: Two (2) 18"; SWM 48: Three (3) 16.5" SWM 52: Three (3) 18"; SWM 61: Three (3) 21"
Blade Engagement:	Electric blade brake clutch with instrument panel switch
Discharge Opening:	Extra wide 11.5", 13.75 " discharge opening with hinged chute
Caster Wheels:	9.4 x 3.5 smooth tread flotation, inner tubes, split rims, roller bearings, with quick pin removal
Spindles:	Cast housing, taper roller bearing, low maintenance with top access grease fitting and grease overfill relief poppet
Spindle Pulleys:	Cast-iron with easily removed taper hubs
Idler Pulley:	5" diameter pulley, welded and riveted construction, 1-3/8" O.D. Bearings
Idler Arm:	Heavy duty idler arm of 1/4" channel steel
Cutter Deck Belts:	B-section with Kevlar cord

ADDITIONAL SPECIFICATIONS

OPTIONAL ITEMS/ATTACHMENTS

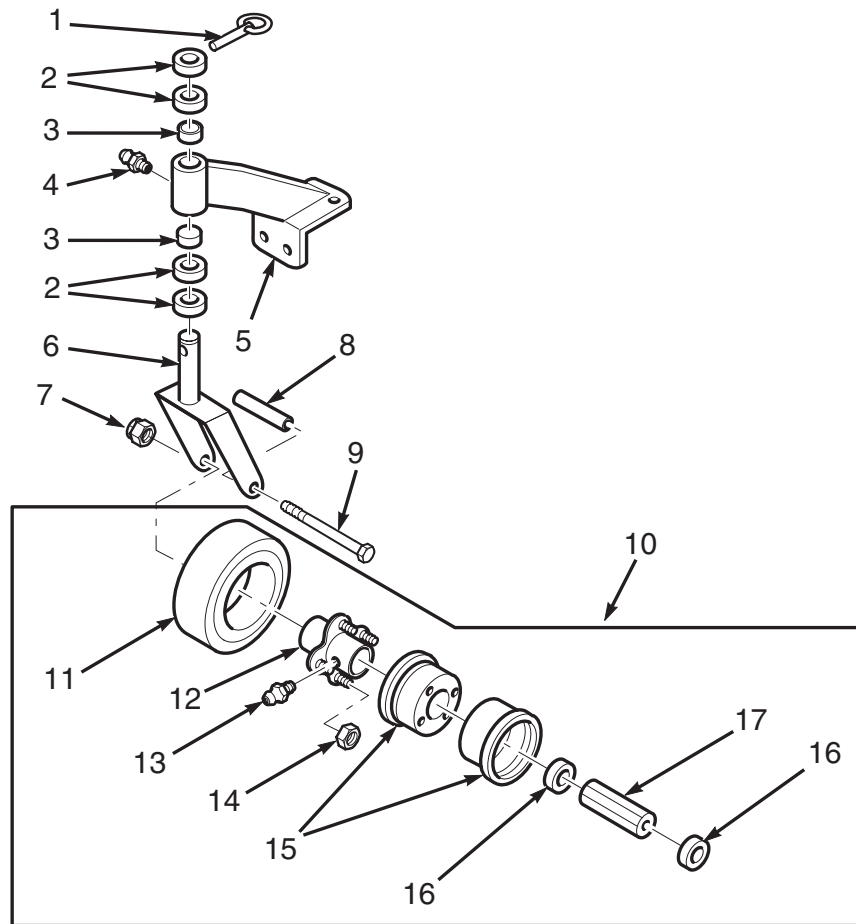
Fabric Grass Catcher:	GC-F4 Grass Catcher with 4 cubic ft. capacity
Metal Grass Catcher:	GC-4D Grass Catcher with 4 cubic ft. capacity and rope pull dump or pick-up and dump
Turbo-Baffle	High velocity discharge baffle. Improves quality-of-cut, and discharge disbursement.
Mulch Master:	Steel plate fits over discharge opening and steel baffles between each blade with Eliminator Blades. Installs and removes in the field.

APPROXIMATE DIMENSIONS	SWM36A	SWM48A	SWM52A	SWM61A
Length:	74.0"	76"	78"	76.0"
Length with Grass Catcher:	74.0"	76"	78"	76.0"
Tracking Width:	37.0"	42.0"	42.0"	42.0"
Width:	54.5"	59.0"	62"	70.0"
Width (with discharge chute up):	37.5"	49.0"	52"	63.0"
With with grass catcher:	55.0"	65.0"	78"	80.0"
Height:	43"	43"	43"	43"
Height with grass catcher:	43"	43"	43"	43"
Weight	515 lbs.	555 lbs	560 lbs	565 lbs.
Weight with grass catcher:	555 lbs.	595 lbs	600 lbs.	605 lbs.
Turning Radius:	Zero	Zero	Zero	Zero

36A" CUTTER DECKS

Ref. Part No. Number Description	Ref. Part No. Number Description
1 461554 Cutter Deck (Includes Decals)	48 43296 Spacer, Inside
2 46631 Cutter Spindle Assy.	49 481035 Nut, 1.06-18
3 43312 Spacer, Outside	50 48677 Relief Fitting, Cutter Spindle
5 481022 Tapered Bearing (Two)	51 481025 Seal, Cutter Spindle
6 43294 Spindle Housing	52 48098 Spindle Shield
7 04001-154 Bolt, 5/16-18 x 4-3/4" Hex Head	53 04029-04 Wing Nut, 3/8-16 (Small) RH side
8 43589 Spindle Shaft	54 48114-04 Grease Fitting
9 04001-77 Bolt, 3/8-16 x 3-1/2" Hex Head	55 04021-09 Nut, Hex Elastic Stop 3/8-16
10 04063-08 Key, 1/4 x 1/4 x 2"	56 04041-07 Flatwasher, 3/8" (.391 x .938 x .105)
11 43592 Spacer, Cutter Blade - Small	57 04003-23 Bolt, Carriage 3/8-16 x 1"
12 04001-10 Bolt, 5/16-18 x 1-1/4" Hex Head	58 423655 Baffle Weldment
13 482245 Spring, Chute Return	
14 04019-03 Nut 5/16-18 Serrated Flange	
15 482462 Cutter Blade, 18" Marbain	
15A 482467 Cutter Blade, 18" Hi Lift Marbain	
16 04043-06 Flatwasher, 5/8 W	
17 04001-41 Hex Hd. Bolt, 5/8-11 x 9-1/2"	
18 46079 Caster Assembly (See Page 3)	
19 04017-16 Cpscrw, 5/16-18 x 3/4" Ser.Flg. Hex Head	
20 461295 Discharge Chute	
21 04021-10 Hex Nut, 5/16-18 Elastic Stop	
22 04001-09 Hex Hd Bolt, 5/16-18 x 1"	
23 461413 Belt Cover Assy (Includes Decal)	
24 04041-07 Flat Washer, 3/8" Special	
25 04029-03 Wing Nut, 3/8-16	
26 48924 Pulley	
27 48926 Tapered Hub	
28 04001-01 Hex Hd. Bolt, 1/4-20 x 3/4"	
29 04020-09 Hex Nut, 5/8-11	
30 48204 Belt, Blade Drive	
31 43077 Spacer	
32 04021-05 Hex Nut, 3/8-16 Center Locknut	
33 04019-04 Nut, 3/8-16 Serrated Flange	
34 04004-02 Support, Belt Cover	
35 04017-36 Cpscrw, 1/2-13 x 1" Ser.Flg. HH	
36 04112-05 Nut, 1/2-13 Spiralock	
37 43277 Spacer, J-Hook	
38 04041-12 Washer, 3/8 x 1-1/2 x 16 GA	
39 04021-09 Elastic Stop Nut, 3/8-16	
40 45423 Idler Pivot	
41 46748 Idler Arm Assy. (Inc. 42 & 54)	
42 48100-02 Bronze Bearing	
43 04050-05 Retaining Ring, 1-1/8" Ext. "E"	
44 44078 J-Hook	
45 482416 Idler Pulley, Belt Clutch	
46 481024 Seal, Cutter Spindle	
47 43297 Spindle Bushing	

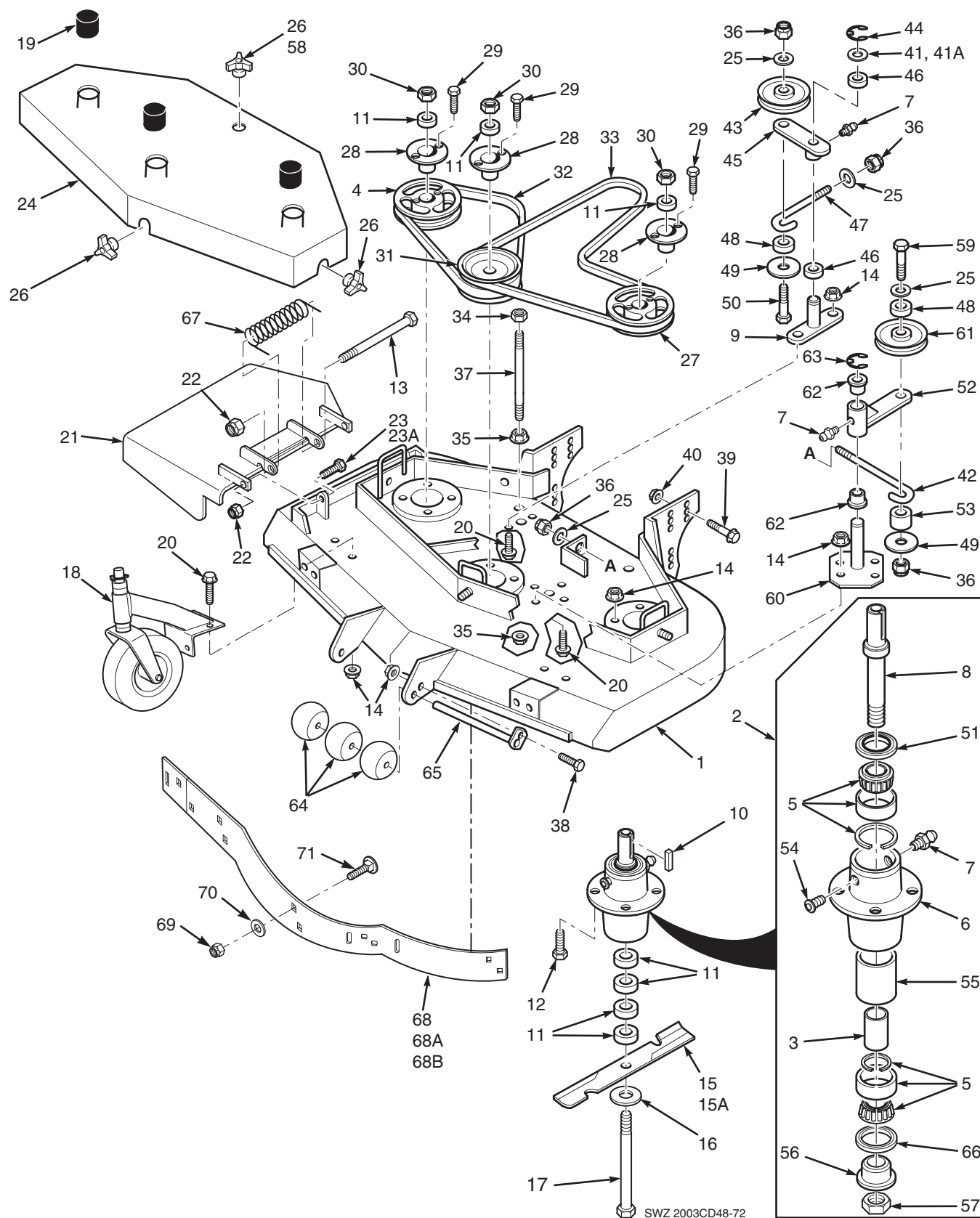
CASTER ASSEMBLY



SW-SWZ2003CSTR

Ref. No.	Part No.	Description	32 48A	36A 52A
1	04066-01	Quick Pin	x	x
2	43037-01	Spacer, Caster Yoke, 1/2" Long	x	x
3	48100-01	Bronze Bearing	x	x
4	48114-04	Grease Fitting	x	x
5	46082	Support Assembly (Includes Items (3 & 4)	x	x
6	45006	Caster Yoke	x	x
7	04021-07	Elastic Stop Nut, 1/2-13	x	x
8	43022	Sleeve, Caster Wheel Bearing	x	x
9	04001-37	Hex Hd. Bolt, 1/3-13 x 5-1/2"	x	x
10	48307	Wheel Assy. (Includes Items 11-17)	x	x
11	481774	Tire Only, Caster Wheel	x	x
	481773	Inner Tube Only (Not Shown)	x	x
12	481768	Hub Assembly	x	x
13	48114-03	Grease Fitting, 45 Degree 1/4-28	x	x
14	481771	Tapered Nut, 5/16-24	x	x
15	481772	Rim Pair, Caster Wheel	x	x
16	481770	Retainer, Bearing, Caster Wheel	x	x
17	481769	Roller Bearing, Caster Wheel	x	x

48A, 52A, 61A, & 72" CUTTER DECKS

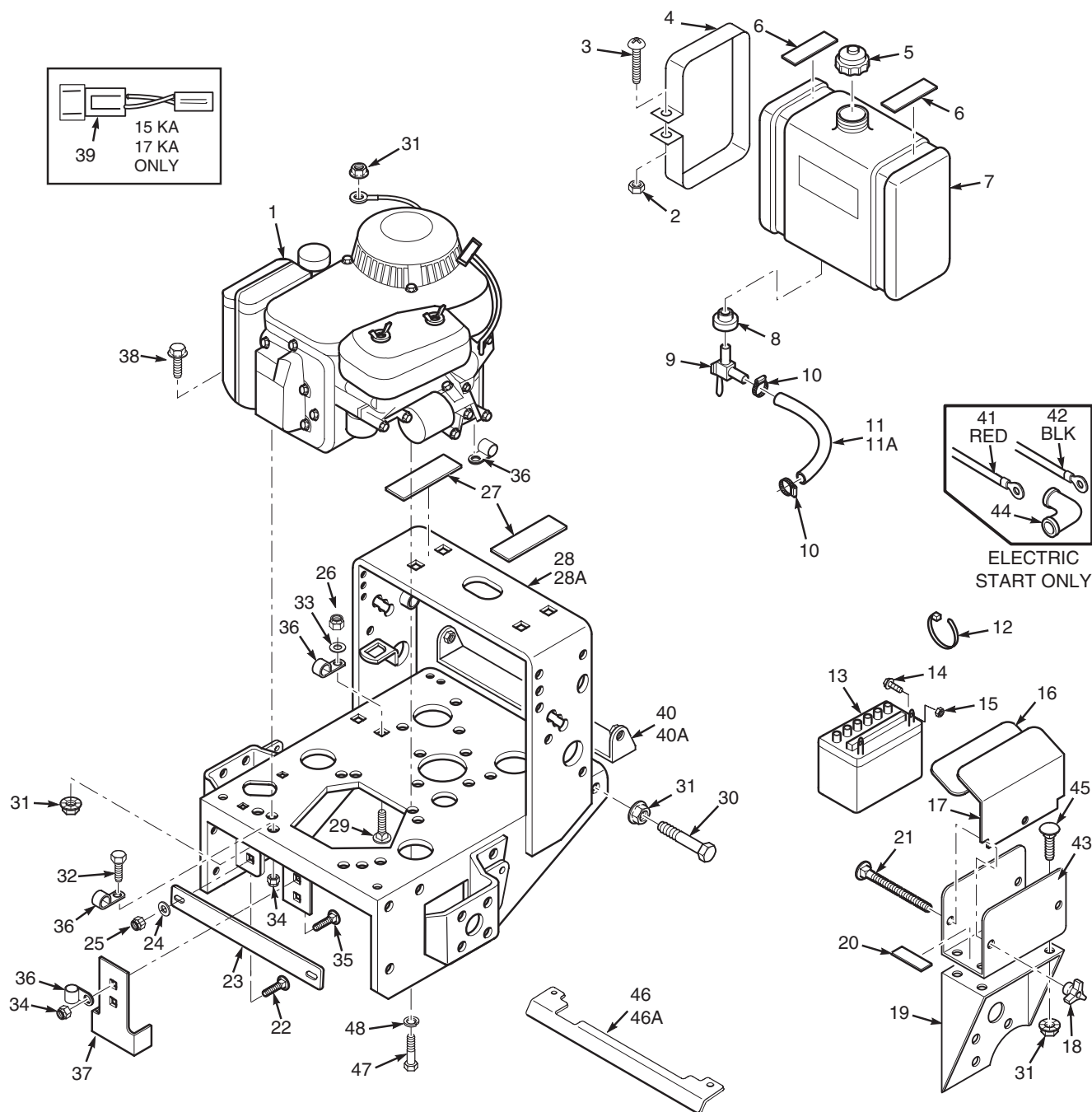


48A, 52A, 61A, & 72" CUTTER DECKS

Ref. Part No. No.	Description	48	52	61	72	Ref. Part No. No.	Description	48	52	61	72
1	461557 Cutter Deck (Inc. Decals)	x				36	04021-09 Nut, 3/8-16 Elastic Stop	x	x	x	x
*1	461559 Cutter Deck (Inc. Decals)		x			37	04004-02 Support, Belt Cover	x	x	x	x
*1	461562 Cutter Deck (Inc. Decals)		x			38	04001-09 Bolt, 5/16-18 x 1" Hex Head	x	x	x	x
1	461565 Cutter Deck (Inc. Decals)			x		39	04017-36 Cpscrw, 1/2-13 x 1" Ser Flng Hex Hd	x	x	x	x
1	461567 Cutter Deck (Includes Decals)				x	40	04112-05 Nut, 1/2-13 Spiralock	x	x	x	x
2	46631 Spindle Assembly	x	x	x	x	41	04041-08 Flat Washer 3/4" Special	x	x	x	x
3	43296 Spacer, Inside	x	x	x	x	41A	04041-08S Flat Washer 3/4" Special	x	x	x	x
4	48924 Pulley	x	x	x	x	42	44078 J-Hook	x	x	x	x
5	481022 Tapered Bearing (Two)	x	x	x	x	43	48181 Idler Pulley, "V" Groove	x	x	x	x
6	43294 Spindle Housing	x	x	x	x	44	04050-02 Retaining Ring, 3/4" Ext."E"	x	x	x	x
7	48114-04 Grease Fitting Str. 5/16	x	x	x	x	45	46081 Idler Arm Assy. (Incl. 7 & 46)	x	x	x	x
8	43589 Spindle Shaft, Tapered Brng	x	x	x	x	46	48100-05 Bronze Bearing	x	x	x	x
9	45037 Idler Pivot	x	x	x	x	47	43028 J-Rod, Idler Pulley	x	x		
10	04063-08 Key, 1/4 x 1/4 x 2"	x	x	x	x		44078 J-Rod, Idler Pulley				x
11	43592 Spacer, Cutter Blade - Small	x	x	x	x	48	43077 Spacer, J-Rod	x	x	x	x
12	04001-10 Bolt, 5/16-18 x 1-1/4" Hex Head	x	x	x	x	49	04041-12 Washer, 3/8 x 1-1/2 x 16 ga.	x	x	x	x
13	04001-154 Bolt, 5/16-18 x 4-3/4" Hex Head	x	x	x	x	50	04001-46 Bolt, 3/8-16 x 2-1/4" Hex Head	x	x	x	x
14	04019-03 Serrated Flange Nut, 5/16-18	x	x	x	x	51	481024 Seal, Cutter Spindle	x	x	x	x
15	482461 Cutter Blade 16-1/2"	x				52	46748 Idler Arm Assy (Includes 62 & 7)	x	x	x	x
	482462 Cutter Blade 18"		x			53	43277 Spacer, J-Rod	x	x	x	x
	482464 Cutter Blade 21"			x		54	48677 Relief Fitting, Cutter Spindle	x	x	x	x
	482465 Cutter Blade 24"				x	55	43312 Spacer, Outside, Cutter Spindle	x	x	x	x
15A	482466 Cutter Blade 16-1/2" Hi Lift	x				56	43297 Spindle Bushing	x	x	x	x
	482467 Cutter Blade 18" Hi Lift		x			57	481035 Nut, Cutter Spindle	x	x	x	x
	482469 Cutter Blade 21" Hi Lift			x		58	04029-04 Wing Nut, 3/8-16 (Small) Top Side	x	x	x	x
16	04043-06 Flatwasher, 5/8" (.688 x 1.75 x .134)	x	x	x	x	59	04001-77 Bolt, 3/8-16 x 3-1/2" Hex Head	x	x	x	x
17	04001-41 Hex Head Bolt, 5/8-11 x 9-1/2"	x	x	x	x	60	45329 Idler Pivot	x	x	x	x
18	46079 Caster Assembly, (See Page 3)	x	x	x	x	61	482416 Idler Pulley, Belt Clutch	x	x	x	x
19	48098 Spindle Shield	x	x	x	x	62	48100-02 Bronze Bearing	x	x	x	x
20	04017-16 Capscrew, 5/16-18 x 3/4"	x	x	x	x	63	04050-05 Retaining Ring	x	x	x	x
21	461292 Discharge Chute			x	x	64	482295 Guide Roller	x	x	x	x
	461295 Discharge Chute	x	x			65	45944 Roller Shaft	x	x	x	x
22	04021-04 Nut, 5/16-18 Elastic Elastic Stop	x	x	x	x	66	481025 Seal, Cutter Spindle	x	x	x	x
23	04001-11 Bolt, 5/16-18 x 1-1/2" Hex Head(front)	x	x	x	x	67	482245 Spring, Chute Return	x	x	x	x
23A	04001-12 Bolt, 5/16-18 x 1-3/4" Hex Head(rear)	x	x	x	x	68	451507 Baffle Weldment 48A	x			
24	461095 Belt Cover (Includes decals)	x				68A	451508 Baffle Weldment 52A		x		
	46804 Belt Cover (Includes decals)		x			68B	451509 Baffle Weldment 61A				x
	461583 Belt Cover (Includes decals)			x		69	04021-09 Nut, Hex Elastic Stop 3/8-16	x	x	x	
	46848 Belt Cover (Includes decals)				x	70	04041-07 Flatwasher, 3/8" (.391 x .938 x .105)	x	x	x	
25	04041-07 Flat Washer, 3/8" Special	x	x	x	x	71	04003-23 Bolt, Carriage 3/8-16 x 1"	x	x	x	
26	04029-03 Wing Nut, 3/8-16 (Large)	x	x	x	x						
27	48924 Pulley	x	x								
	48753 Pulley			x							
	48967 Pulley				x						
28	48926 Tapered Hub	x	x	x	x						
29	04001-01 Bolt, 1/4-20 x 3/4" Hex Head	x	x	x	x						
30	04020-09 Nut, 5/8-11 Hex	x	x	x	x						
31	48923 Pulley, Double	x	x								
	48940 Pulley, Double			x							
	48966 Pulley, Double				x						
32	48087 Belt, RH Blade Drive	x									
	48285 Belt, RH Blade Drive		x								
	48265 Belt, RH Blade Drive			x							
	48295 Belt, RH Blade Drive				x						
33	48089 Belt, Blade Drive	x									
	48286 Belt, Blade Drive		x								
	48088 Belt, Blade Drive			x							
	48296 Belt, Blade Drive				x						
34	04021-05 Nut, 3/8-16, Nut Centerlock	x	x	x	x						
35	04019-04 Nut, 3/8-16, Serrated Flange	x	x	x	x						

* Measure the engine deck to determine frame size. 461559 is for small frame (16") & 461562 is for large frame (20")

ENGINE DECK



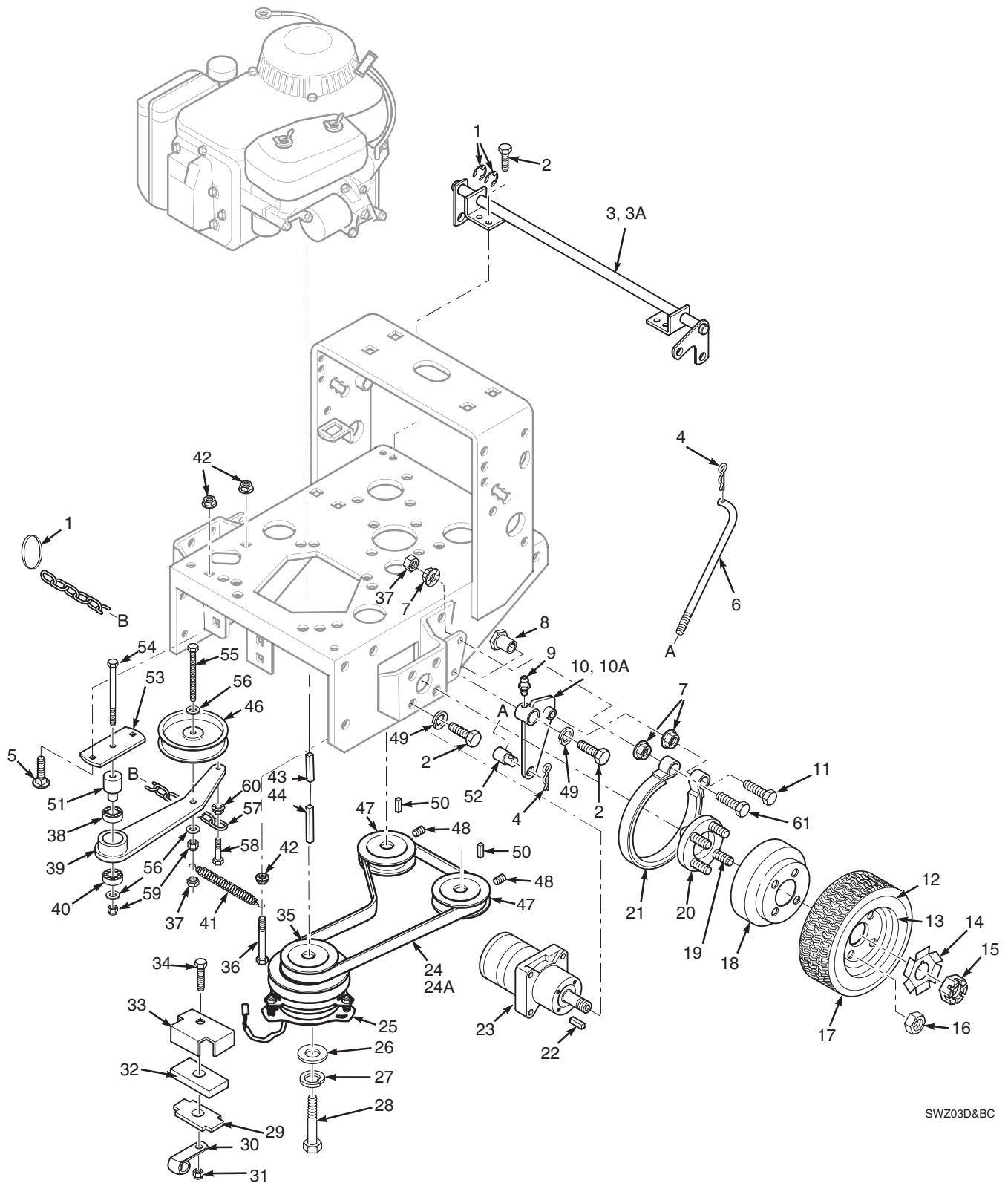
SWZ2003ED

ENGINE DECK

Ref. No.	Part No.	Description	15KA	17KA	17KAE	21KAE	18KH
1	482144	Engine 15KA Kawasaki	x				
1	481563	Engine 17KA Kawasaki		x			
1	482145	Engine 17KAE Kawasaki			x		
1	48971	Engine 21KAE Kawasaki				x	
1	482677	Engine 18KH Kohler					x
2	04020-02	Hex Nut, 1/4-20	x	x	x	x	x
3	04010-10	Screw, 1/4-20 x 2" Rnd. Hd. Phil.	x	x	x	x	x
4	421239	Strap, Fuel Tank	x	x	x	x	x
5	481603	Cap, Fuel Tank	x	x	x	x	x
6	48292	Pad, Rubber-Fuel Tank - Upper	x	x	x	x	x
7	46846	Fuel Tank Assy. (incl. 8, 9)	x	x	x	x	x
8	48309	Bushing	x	x	x	x	x
9	48308	Valve, Fuel Shut-off	x	x	x	x	x
10	48059-01	Clamp, Fuel Hose	x	x	x	x	x
11	48058	Fuel Hose, 1/4 ID x 20" KA	x	x	x	x	
11A	48058	Fuel Hose, 1/4 ID x 10" KH					x
12	48028-05	Cable Tie	x	x	x	x	x
13	482700	Battery			x	x	
14	04001-44	Bolt, 1/4-20 x .50"			x	x	
15	04020-02	Nut, 1/4-20			x	x	
16	48099	Pad			x	x	
17	42392	Battery Cover			x	x	
18	04029-01	Wing Nut, 1/4-20			x	x	
19	423746	Battery Support			x	x	
20	48661	Pad, Rubber			x	x	
21	04003-01	Bolt, 1/4-20 x 6" Carriage			x	x	
22	04003-11	Carriage Bolt, 3/8-16 X 1-1/4"			x	x	x
23	423748	Brace	x	x	x	x	x
24	04043-04	Flat Washer .391 x .938 x .105	x	x	x	x	x
25	04021-09	Nut, 3/8-16 Elastic Stop	x	x	x	x	x
26	04021-08	Nut, 1/4-20 Elastic Stop	x	x	x	x	x
27	48205	Pad, Rubber-Fuel Tank Lower	x	x	x	x	x
28	461542	Engine Deck, 16" Wide, w/decals	x	x	x		x
28A	461546	Engine Deck, 20" Wide, w/decals		x		x	
29	04003-09	Bolt, 1/4-20 x 1-1/4" Carriage	x	x	x	x	x
30	04001-17	Bolt, 5/16-18 x 2" Hex Head	x	x	x	x	x
31	04019-03	Nut, 5/16-18 Serr. Flange	x	x	x	x	x
32	04001-08	Hex Head Bolt, 5/16-18 x .75"	x	x	x	x	x
33	04040-14	Flat Washer 1/4"	x	x	x	x	x
34	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	x	x
35	04003-04	Carriage Bolt, 5/16-18 x 1"	x	x	x	x	x
36	48030-09	Clamp	x	x	x	x	x
37	421370	Clutch Bracket	x	x	x	x	x
38	04017-19	CapScrw, 5/16-18 x 1.50" Sr. Flg	x	x	x	x	
39	481717	Wire Hrns. Adapter, 15 & 17KA	x	x			
40	45418	Pulley Guard, 16" Frame	x	x	x		x
40A	45419	Pulley Guard, 20" Frame		x		x	
41	48029-02	Battery Cable, 31.5" Red			x	x	
42	48029-14	Battery Cable, 31.5" Black			x	x	
43	423308	Battery Box			x	x	
44	48126	Rubber Boot			x	x	
45	04003-12	Carriage Bolt, 5/16-18 x .75"			x	x	
*46	423747	Heatshield (16" Small Frame)	x	x	x		x
*46A	422882	Heatshield (20" Large Frame)		x		x	
47	04017-19	Bolt, 5/16-18 x 1" Serrated Flange Hex Head					x
48	04030-03	Lock Washer 5/16"					x

* Measure the engine deck to determine frame size. 423747 is for small frame (16") & 422882 is for large frame (20")

DRIVE AND BRAKE COMPONENTS

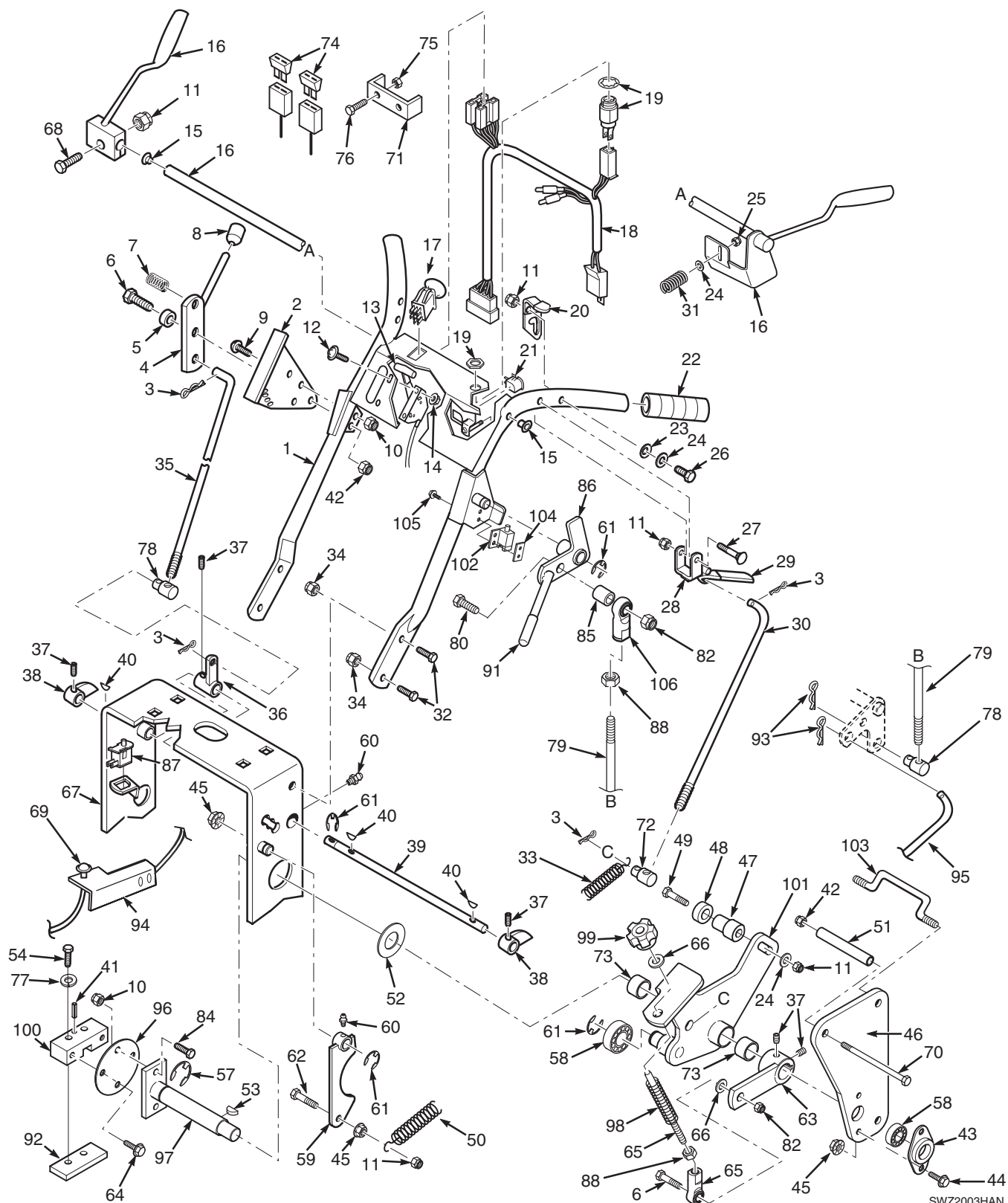


SWZ03D&BC

DRIVE AND BRAKE COMPONENTS

Ref. No.	Part. No.	Description	15KA	17KA	17KAE	21KAE	18KH
1	481876	Ring, Split	x	x	x	x	x
2	04001-19	Bolt, 3/8-16 x 1" Hex Head	x	x	x	x	
3	45842	Brake Shaft Assembly Weldment (16" Small Frame)	x	x	x		x
3A	45854	Brake Shaft Assembly Weldment (20" Large Frame)		x		x	
4	04062-01	Hair Pin Cotter, .094 x 1.62	x	x	x	x	x
5	04003-12	Carrage Bolt, 5/16-18 x .75"	x	x	x	x	x
6	44126	Rod, Brake Lower	x	x	x	x	x
7	04019-04	Nut, 3/8-16 Serr. Flange	x	x	x	x	x
8	43415	Bushing, Brake	x	x	x	x	x
9	48114-05	Grease Fitting	x	x	x	x	x
10	45860	Brake Actuator Wlmt., LH	x	x	x	x	x
10A	45861	Brake Actuator Wlmt., RH	x	x	x	x	x
11	04001-46	Bolt, 3/8-16 x 2-1/4"	x	x	x	x	x
12	481618	Tire, 16 x 6.50, 4 ply	x	x	x	x	x
13	481890	Rim Assy	x	x	x	x	x
14	422214	Lock Washer, Wheel Motor	x	x	x	x	x
15	48679	Hex Castle Nut, 3/4-28 UNEF	x	x	x	x	x
16	04028-01	Nut, Lug	x	x	x	x	x
17	481502	Wheel Assy., (incl. 12,13)	x	x	x	x	x
18	422215	Brake Drum	x	x	x	x	x
19	04008-01	1/2-20 Serrated Bolt	x	x	x	x	x
20	46928	Hub, Wheel	x	x	x	x	x
21	481470	Brake Band, 7.5"	x	x	x	x	x
22	04063-07	Key, 3/16 X .75 Woodruff	x	x	x	x	x
23	481416	Wheel Motor	x	x	x	x	x
24	48553	Belt, Pump Drive (16" Small Frame)	x	x	x		x
24A	48587	Belt, Pump Drive (20" Large Frame)		x		x	
25	461397	Electric Clutch	x	x	x	x	x
26	04041-28	Flat Washer .469 x 1.75 x .25	x	x	x	x	x
27	04030-05	Lock Washer, 7/16	x	x	x	x	x
28	04102-05	Hex Head Bolt, 7/16-20 x 2-3/4"	x	x	x	x	x
29	422534	Plate, Backing	x	x	x	x	x
30	48030-09	Clamp	x	x	x	x	x
31	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	x	x
32	481716	Rubber Pad, Clutch Stop	x	x	x	x	x
33	422533	Retainer, Clutch Stop	x	x	x	x	x
34	04001-12	Hex Head Bolt, 5/16-18 x 1.75"	x	x	x	x	x
35	481665	Pulley, Pump Drive Engine	x	x	x	x	x
36	04001-13	Hex Head Bolt, 5/16-18 x 2.75"	x	x	x	x	x
37	04021-05	Nut, 3/8-16 Center Lock	x	x	x	x	x
38	48224	Ball Bearings	x	x	x	x	x
39	461183	Idler Arm Weldment, Pump (incl. 38 & 40)	x	x	x	x	x
40	48224	Ball Bearings	x	x	x	x	x
41	481835	Spring, Pump Belt Idler	x	x	x	x	x
42	04019-03	Nut, 5/16-18 Serr. Flange	x	x	x	x	x
43	04063-20	Key, 1/4x1/4 x 1.00" Clutch Mtg.	x	x	x	x	x
44	04063-24	Key, 1/4x1/4 x 2.75" Pulley Mtg.	x	x	x	x	x
45	04041-07	Flat Washer, 3/8	x	x	x	x	x
46	482306	Pulley, Idler 4.5"	x	x	x	x	x
47	48586	Pulley, Pump Shaft	x	x	x	x	x
48	04012-04	Setscrew, 5/16-18 x 3/8"	x	x	x	x	x
49	04030-04	Lockwasher, 3/8	x	x	x	x	x
50	04063-14	Key, 5.0 x 5.0 x 25mm	x	x	x	x	x
51	43504	Pivot, Idler (Long)	x	x	x	x	x
52	43032	Swivel Joint	x	x	x	x	x
53	422713	Base, Idler Pivot	x	x	x	x	x
54	04001-54	Bolt, Hex Head 3/8-16 x 3"	x	x	x	x	x
55	04001-161	Bolt, Hex Head 3/8-16 x 2.75"	x	x	x	x	x
56	04043-04	Flatwasher 3/8"	x	x	x	x	x
57	481873	Chain	x	x	x	x	x
58	04001-59	Bolt, Hex Head 1/4-20 x 1.25"	x	x	x	x	x
59	04021-09	Nut, Hex Elastic Stop 3/8-16	x	x	x	x	x
60	04019-02	Nut, Serrated Flange 1/4-20	x	x	x	x	x
61	04001-151	Bolt, Hex Head 3/8-16 x 2.63"	x	x	x	x	x

HANDLE ASSEMBLY SMALL FRAME (16")



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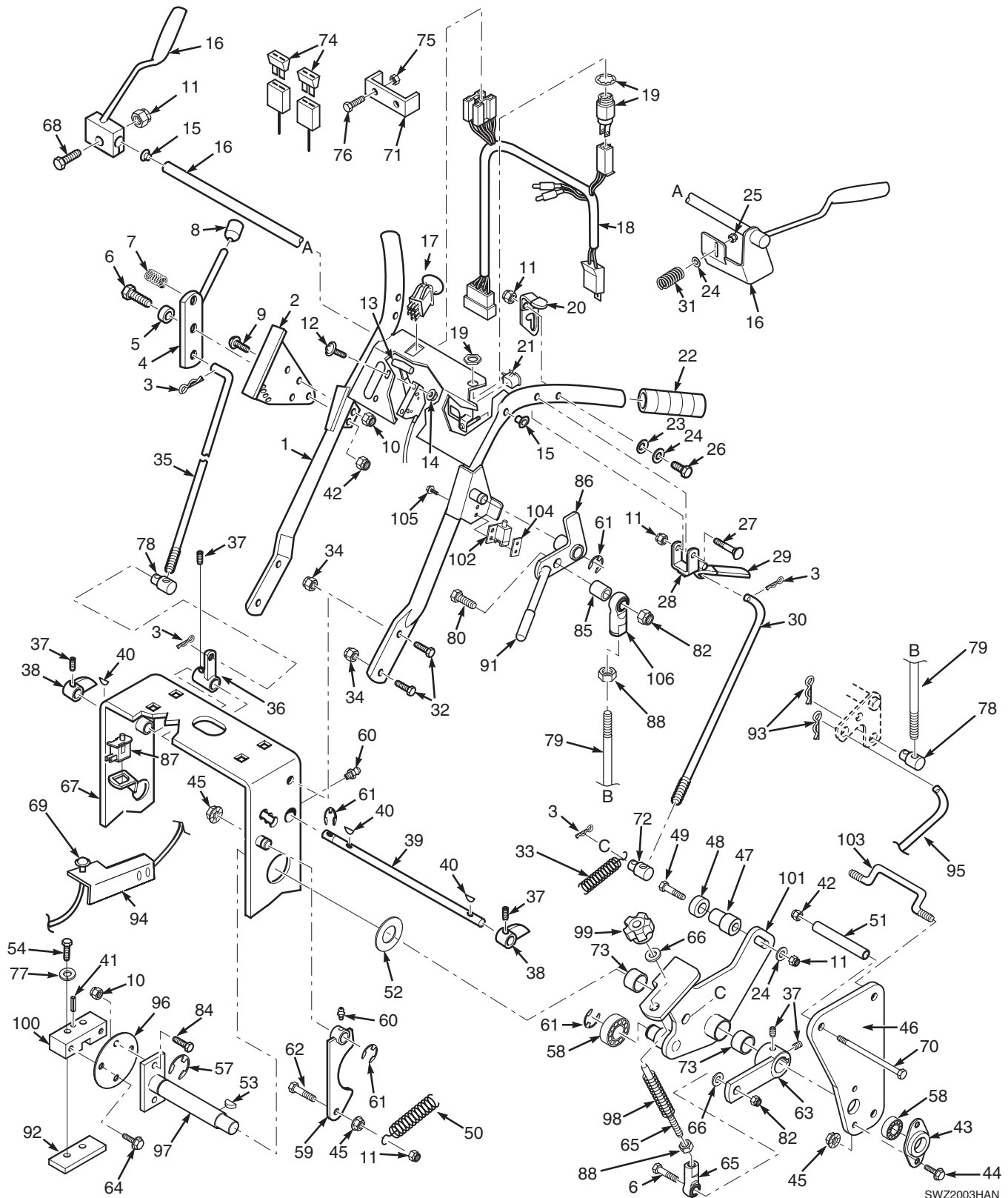
HANDLE ASSEMBLY *SMALL FRAME (16")

Ref. No.	Part No.	Description	15KA			Ref. No.	Part No.	Description	15KA		
			17KA	17KAE	18KH				17KA	17KAE	18KH
1	461598	Upper Handle Wlmt. W/Decals	x	x	x	53	04063-07	Key, Woodruff, 3/16 x .75"	x	x	x
2	42675	Quadrant, Speed Control	x	x	x	54	04001-59	Bolt, Hex Head, 1/4-20 x 1.25	x	x	x
3	04062-02	Hairpin, .094 x 1.19	x	x	x	55	04001-08	HH Bolt, 5/16-18 x .75"	x	x	x
4	45282	Lever, Speed Adjustment	x	x	x	56	04030-03	Lock Washer, 5/16	x	x	x
5	43086	Bushing, Speed Adjustment Lever	x	x	x	57	04050-02	Clip, Retaining .750 diameter	x	x	x
6	04001-20	Hex Head Bolt, 3/8-16 x 1.5"	x	x	x	58	48224	Bearing, Ball Neutral Return	x	x	x
7	48493-01	Ball Plunger	x	x	x	59	46747	Cam, Neutral (incl. grease ftng.)	x	x	x
8	48092	Knob, Speed Adjustment	x	x	x	60	48114-05	Grease Fitting, 1/4-28 UNF	x	x	x
9	04014-01	Capscrew, 1/4-20 x 3/4" FHHS	x	x	x	61	04050-01	Retaining Ring, 5/8"	x	x	x
10	04021-08	Nut, 1/4-20 Elastic Stop	x	x	x	62	04001-09	Hex Head Bolt, 5/16-18 x 1"	x	x	x
11	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	63	482146	Lever, Speed Control	x	x	x
12	04010-01	Screw, #10-32 x 1/2" PW HD	x	x	x	64	04001-01	Bolt, Serr. Flange 1/4-20 x .75"	x	x	x
13	48946	Throttle Control	x	x		65	482431	Linkage Assembly	x	x	x
	481071	Throttle Control			x	66	04041-07	Flat Wshr., 15/16 x .3906 x 12 ga	x	x	x
14	04019-01	Nut, #10-32 Serr. Flange	x	x	x	67	461542	Deck, Engine 16" Wide	x	x	x
15	48312	Bushing	x	x	x	68	04001-10	Hex Head Bolt, 5/16-18 x 1.25"	x	x	x
16	45572	Handle, Oper. Presence-RH	x	x	x	69	482314	Choke Control	x	x	x
	45573	Handle, Oper. Presence-LH	x	x	x	70	04001-152	Bolt, Hex Head 3/8-16 x 4.25"	x	x	x
17	481687	Switch, Elec. Clutch Eng. (incl. Nut)	x	x	x	71	42413	Fuse Holder		x	
18	482686	Wire Harness, Manual Start	x		x	72	43520	Swivel Joint, Steering Rod	x	x	x
	482687	Wire Harness, Electric Start		x		73	48100-06	Bushing	x	x	x
19	48609	Key Switch, Manual Srt. (inc. Hdw)	x		x	74	48298	Blade Fuse, 20A		x	
	48798	Key Switch, Electric Srt. (inc. Hdw)		x		75	04021-01	Nut, #10-32 Elastic Stop		x	
20	461242	Neutral Latch-RH	x	x	x	76	04010-03	Screw, #10-32 x 1.5" Phillips		x	
	461241	Neutral Latch-LH	x	x	x	77	04030-02	Lockwasher, 1/4"	x	x	x
21	48717	Switch, Neutral Interlock	x	x	x	78	43032	Swivel Joint	x	x	x
22	48159	Grip	x	x	x	79	44143	Rod, Brake Lever	x	x	x
23	04032-01	Washer, Curved Spring	x	x	x	80	04001-45	Hex Hd. Bolt, 3/8-16 x 2.00"	x	x	x
24	04040-15	Flat Washer	x	x	x	81	04015-13	Soc. Hd. Capscrew, #8-32 x .5"	x	x	x
25	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	82	04021-09	Nut, 3/8-16 Elastic Stop	x	x	x
26	04001-17	Hex Head Bolt, 5/16-18 x 2"	x	x	x	83	04041-23	Washer #8-.170 x .375 x .032	x	x	x
27	04001-53	Hex Hd. Bolt, 5/16-18 x 2.5"	x	x	x	84	04001-01	Bolt, 1/4-20 x .75"	x	x	x
28	46089	Lever, Steering Control (incl. 29)	x	x	x	85	43286	Spacer	x	x	x
29	48144	Grip, Steering Control	x	x	x	86	461605	Parking Brake Lever with Grip	x	x	x
30	44141	Rod, Steering Control	x	x	x	87	48717	Switch, Safety	x	x	x
31	48951	Spring, Handle Return	x	x	x	88	04020-14	Nut, 3/8-24	x	x	x
32	04017-27	Capscrew, 3/8-16 x 1" Ser. Flange	x	x	x	89	481411	Bushing, Bearing Retainer	x	x	x
33	481866	Spring	x	x	x	90	481420	Bearing, Neutral Lock	x	x	x
34	04019-04	Nut, 3/8-16 Serr. Flange	x	x	x	91	48342	Grip, Parking Brake	x	x	x
35	44142	Rod Speed Control	x	x	x	92	421203	Plate, Threaded	x	x	x
36	451562	Bellcrank, Speed Control	x	x	x	93	04062-01	Hairpin, .094 x 1.62"	x	x	x
37	04012-02	Setscrew, 1/4-28 x .25"	x	x	x	94	421622	Bracket, Choke Mtg.	x	x	x
38	46335	Cam, Speed Control (incl. SS)	x	x	x	95	44126	Rod, Lower Brake	x	x	x
39	43166	Jackshaft, Speed Control	x	x	x	96	422273	Plate, Coupler	x	x	x
40	04063-13	Key, 1/8 x 1/2" Woodruff	x	x	x	97	451113	Shaft, Pump Control	x	x	x
41	04060-06	Roll Pin, 3/16-.75	x	x	x	98	481879	Spring	x	x	x
42	04021-10	Nut, Elastic Stop 3/8-16	x	x	x	99	481885-03	Knob, Tracking Adjustment	x	x	x
43	48223	Flange, Bearing	x	x	x	100	48829	Block, Pump Control	x	x	x
44	**	Capscrew, 5/16-18 x 1" Serr. Flg.	x	x	x	101	461481	Control, LH (inc. bush. & decal)	x	x	x
45	04019-03	Nut, 5/16-18 Serrated Flange	x	x	x		461482	Control, RH (inc. bush. & decal)	x	x	x
46	422795	Plate, Side	x	x	x	102	481545	Switch, Parking Brake	x	x	x
47	43536	Spacer, Neutral Bearing	x	x	x	103	44144	Rod, Offset	x	x	x
48	48409	Bearing, Speed Ctrl. Bellcrank	x	x	x	104	422373	Plate, Threaded	x	x	x
49	04001-69	Hex Head Bolt, 5/16-18 x 1-3/4"	x	x	x	105	04010-12	Screw #10-32 Slt'd Hex Wshr Hd	x	x	x
50	48494-02	Spring, Return	x	x	x	106	48464	Ball Joint, RH Thread	x	x	x
51	43522	Spacer, Side Plate	x	x	x						
52	04041-08S	Flat Wshr., .766 x 1.25 x .035	x	x	x						

* Measure the width of the engine deck to determine frame size. "Small Frame" is 16" wide.

** Common hardware which should be purchased locally. All bolts are Grade 5 plated, all other fasteners zinc plated.

HANDLE ASSEMBLY LARGE FRAME (20")



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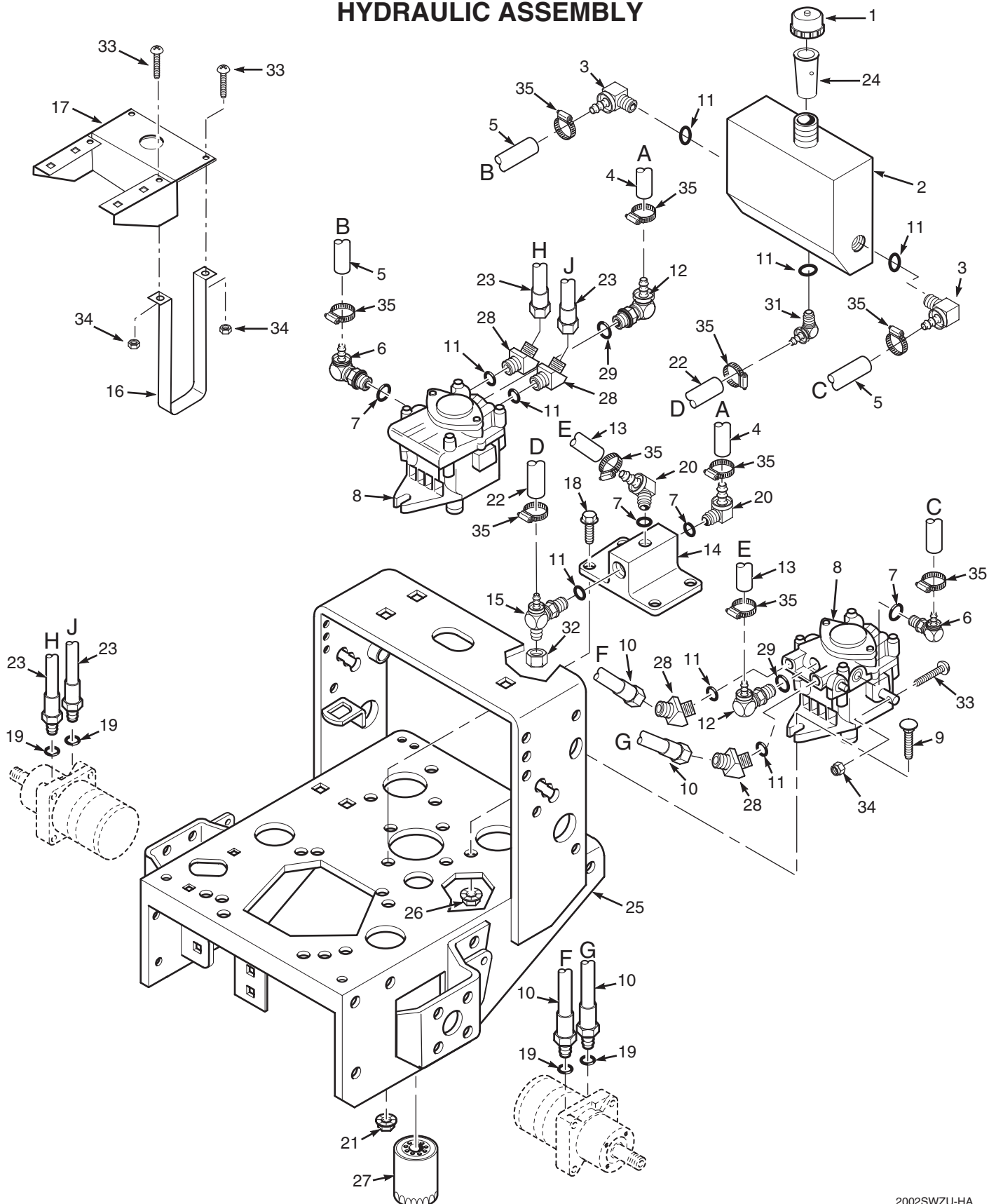
HANDLE ASSEMBLY *LARGE FRAME (20")

Ref. No.	Part No.	Description	17KA	21KAE	Ref. No.	Part No.	Description	17KA	21KAE
1	461599	Upper Handle Wlmt. W/Decals	x	x	53	04063-07	Key, Woodruff, 3/16 x .75"	x	x
2	42675	Quadrant, Speed Control	x	x	54	04001-59	Bolt, Hex Head, 1/4-20 x 1.25	x	x
3	04062-02	Hairpin, .094 x 1.19	x	x	55	04001-08	HH Bolt, 5/16-18 x .75"	x	x
4	45282	Lever, Speed Adjustment	x	x	56	04030-03	Lock Washer, 5/16	x	x
5	43086	Bushing, Speed Adjustment Lever	x	x	57	04050-02	Clip, Retaining .750 diameter	x	x
6	04001-20	Hex Head Bolt, 3/8-16 x 1.5"	x	x	58	48224	Bearing, Ball Neutral Return	x	x
7	48493-01	Ball Plunger	x	x	59	46747	Cam, Neutral (incl. grease ftng.)	x	x
8	48092	Knob, Speed Adjustment	x	x	60	48114-05	Grease Fitting, 1/4-28 UNF	x	x
9	04014-01	Capscrew, 1/4-20 x 3/4" FHHS	x	x	61	04050-01	Retaining Ring, 5/8"	x	x
10	04021-08	Nut, 1/4-20 Elastic Stop	x	x	62	04001-09	Hex Head Bolt, 5/16-18 x 1"	x	x
11	04021-10	Nut, 5/16-18 Elastic Stop	x	x	63	482146	Lever, Speed Control	x	x
12	04010-01	Screw, #10-32 x 1/2" PW HD	x	x	64	04001-01	Bolt, Serr. Flange 1/4-20 x .75"	x	x
13	48946	Throttle Control	x	x	65	482431	Linkage Assembly	x	x
14	04019-01	Nut, #10-32 Serr. Flange	x	x	66	04041-07	Flat Wshr., 15/16 x .3906 x 12 ga	x	x
15	48312	Bushing	x	x	67	461546	Deck, Engine 20" Wide	x	x
16	45572	Handle, Oper. Presence-RH	x	x	68	04001-10	Hex Head Bolt, 5/16-18 x 1.25"	x	x
	45571	Handle, Oper. Presence-LH	x	x	69	482314	Choke Control	x	x
17	481687	Switch, Elec. Clutch Eng. (incl. Nut)	x	x	70	04001-152	Bolt, Hex Head 3/8-16 x 4.25"	x	x
18	482686	Wire Harness, Manual Start	x		71	42413	Fuse Holder		x
	482687	Wire Harness, Electric Start		x	72	43520	Swivel Joint, Steering Rod	x	x
19	48609	Key Switch, Manual Srt. (inc. Hdw)	x		73	48100-06	Bushing	x	x
	48798	Key Switch, Electric Srt. (inc. Hdw)		x	74	48298	Blade Fuse, 20A		x
20	461242	Neutral Latch-RH	x	x	75	04021-01	Nut, #10-32 Elastic Stop		x
	461241	Neutral Latch-LH	x	x	76	04010-03	Screw, #10-32 x 1.5" Phillips		x
21	48717	Switch, Neutral Interlock	x	x	77	04030-02	Lockwasher, 1/4"	x	x
22	48159	Grip	x	x	78	43032	Swivel Joint	x	x
23	04032-01	Washer, Curved Spring	x	x	79	44143	Rod, Brake Lever	x	x
24	04040-15	Flat Washer	x	x	80	04001-45	Hex Hd. Bolt, 3/8-16 x 2.00"	x	x
25	04021-10	Nut, 5/16-18 Elastic Stop	x	x	81	04015-13	Soc. Hd. Capscrew, #8-32 x .5"	x	x
26	04001-17	Hex Head Bolt, 5/16-18 x 2"	x	x	82	04021-09	Nut, 3/8-16 Elastic Stop	x	x
27	04001-53	Hex Hd. Bolt, 5/16-18 x 2.5"	x	x	83	04041-23	Washer #8-.170 x .375 x .032	x	x
28	46089	Lever, Steering Control (incl. 29)	x	x	84	04001-01	Bolt, 1/4-20 x .75"	x	x
29	48144	Grip, Steering Control	x	x	85	43286	Spacer	x	x
30	44141	Rod, Steering Control	x	x	86	461605	Parking Brake Lever with Grip	x	x
31	48951	Spring, Handle Return	x	x	87	48717	Switch, Safety	x	x
32	04017-27	Capscrew, 3/8-16 x 1" Ser. Flange	x	x	88	04020-14	Nut, 3/8-24	x	x
33	481866	Spring	x	x	89	481411	Bushing, Bearing Retainer	x	x
34	04019-04	Nut, 3/8-16 Serr. Flange	x	x	90	481420	Bearing, Neutral Lock	x	x
35	44142	Rod Speed Control	x	x	91	48342	Grip, Parking Brake	x	x
36	451562	Bellcrank, Speed Control	x	x	92	421203	Plate, Threaded	x	x
37	04012-02	Setscrew, 1/4-28 x .25"	x	x	93	04062-01	Hairpin, .094 x 1.62"	x	x
38	46335	Cam, Speed Control (incl. SS)	x	x	94	421622	Bracket, Choke Mtg.	x	x
39	43166	Jackshaft, Speed Control	x	x	95	44126	Rod, Lower Brake	x	x
40	04063-13	Key, 1/8 x 1/2" Woodruff	x	x	96	422273	Plate, Coupler	x	x
41	04060-06	Roll Pin, 3/16-.75	x	x	97	451113	Shaft, Pump Control	x	x
42	04021-10	Nut, Elastic Stop 3/8-16	x	x	98	481879	Spring	x	x
43	48223	Flange, Bearing	x	x	99	481885-03	Knob, Tracking Adjustment	x	x
44	**	Capscrew, 5/16-18 x 1" Serr. Flg.	x	x	100	48829	Block, Pump Control	x	x
45	04019-03	Nut, 5/16-18 Serrated Flange	x	x	101	461481	Control, LH (inc. bush. & decal)	x	x
46	422795	Plate, Side	x	x		461482	Control, RH (inc. bush. & decal)	x	x
47	43536	Spacer, Neutral Bearing	x	x	102	481545	Switch, Parking Brake	x	x
48	48409	Bearing, Speed Ctrl. Bellcrank	x	x	103	44144	Rod, Offset	x	x
49	04001-69	Hex Head Bolt, 5/16-18 x 1-3/4"	x	x	104	422373	Plate, Threaded	x	x
50	48494-02	Spring, Return	x	x	105	04010-12	Screw #10-32 Std Hex Wshr Hd	x	x
51	43522	Spacer, Side Plate	x	x	106	48464	Ball Joint, RH Thread	x	x
52	04041-08S	Flat Wshr., .766 x 1.25 x .035	x	x					

* Measure the width of the engine deck to determine frame size. "Large Frame" is 20" wide.

** Common hardware which should be purchased locally. All bolts are Grade 5 plated, all other fasteners zinc plated.

HYDRAULIC ASSEMBLY

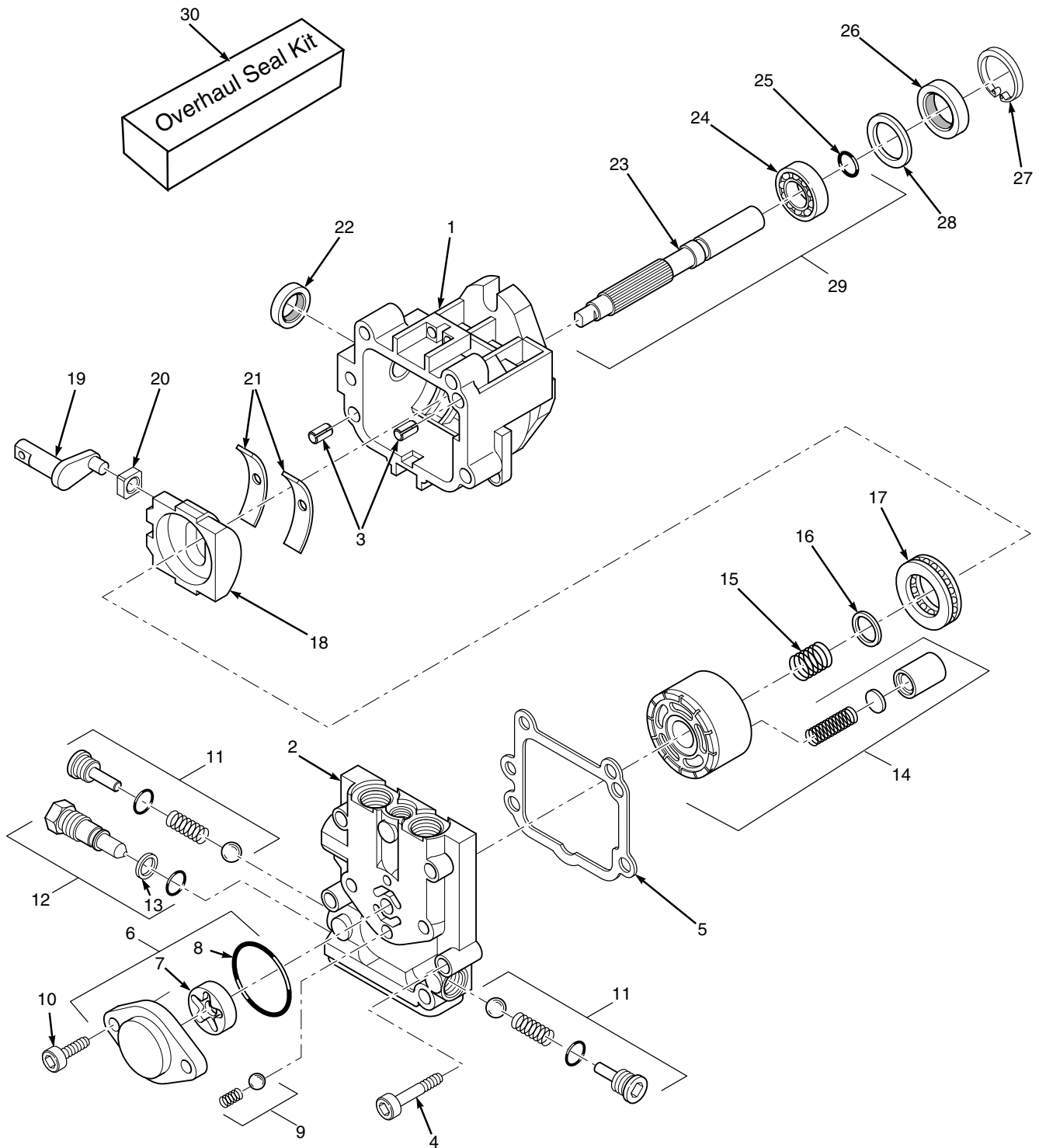


2002SWZU-HA

HYDRAULIC ASSEMBLY

Ref. No.	Part Number	Description
1	481164	Cap, Oil Reservoir
2	461428	Oil Reservoir (With Fittings)
3	482266-01	Elbow, 9/16 O-Ring x 3/8 Hose
4	48811	Hose, 3/8" ID - 16" Long (Order By The Inch)
5	48811	Hose, 3/8" ID - 7" Long (Order By The Inch)
6	482266-03	Elbow, 90 deg. 7/16-20 JIC to 9/16-18 "O" Ring
7	48603-06	O-Ring
8	48551	Pump, Hydro-Gear BDP-10L117
9	04003-11	Bolt, Carriage, 3/8-16 x 1.25"
10	481265	Hose, Pump to Wheel Motor
11	48603-02	O-Ring
12	482266-03	Elbow, 7/16 O-Ring x 3/8 Hose
13	48811	Hose, 3/8" ID - 10-1/4" Long (Order By The Inch)
14	482417	Oil Filter Base
15	482477	Tee, 3/8 O-Ring x JIC x 1/2 Hose
16	422794	Strap, Hydraulic Tank
17	422793	Bracket, Hydraulic Tank
18	04017-16	Capscrew, 5/16-18 x .75" Serr. Flange
19	48603-04	O-Ring
20	482266-01	Elbow, 9/16 O-Ring x 3/8 Hose
21	04019-03	Nut, 5/16-18 Serr. Flange
22	482305	Hose, Formed 1/2" ID
23	481849	Hose, Pump to Wheel Motor
24	481507	Tube, Filler Neck
25	461542	Engine Deck (16" Wide) W/Decals - Small Frame
	461546	Engine Deck (20" Wide) W/Decals - Large Frame
26	04019-04	Nut, 3/8-16 Serr. Flange
27	48462-01	Oil Filter
28	48485-01	Elbow, 45 Deg.-3/4-16 JIC Male x Male 3/4-16 O-Ring
29	48603-03	O-Ring
30	481537-02	Coupling, 3/8 Pipe to 1/2 Push-on
31	482202	Elbow, 3/4-16 O-Ring x 1/2 Hose
32	48571-02	Cap, 3/4-16
33	04010-10	Screw, 1/4-20 x 2.0" Round Head Phillips
34	04021-08	Nut, 1/4-20
35	48136-05	Clamp, .87 max dia.

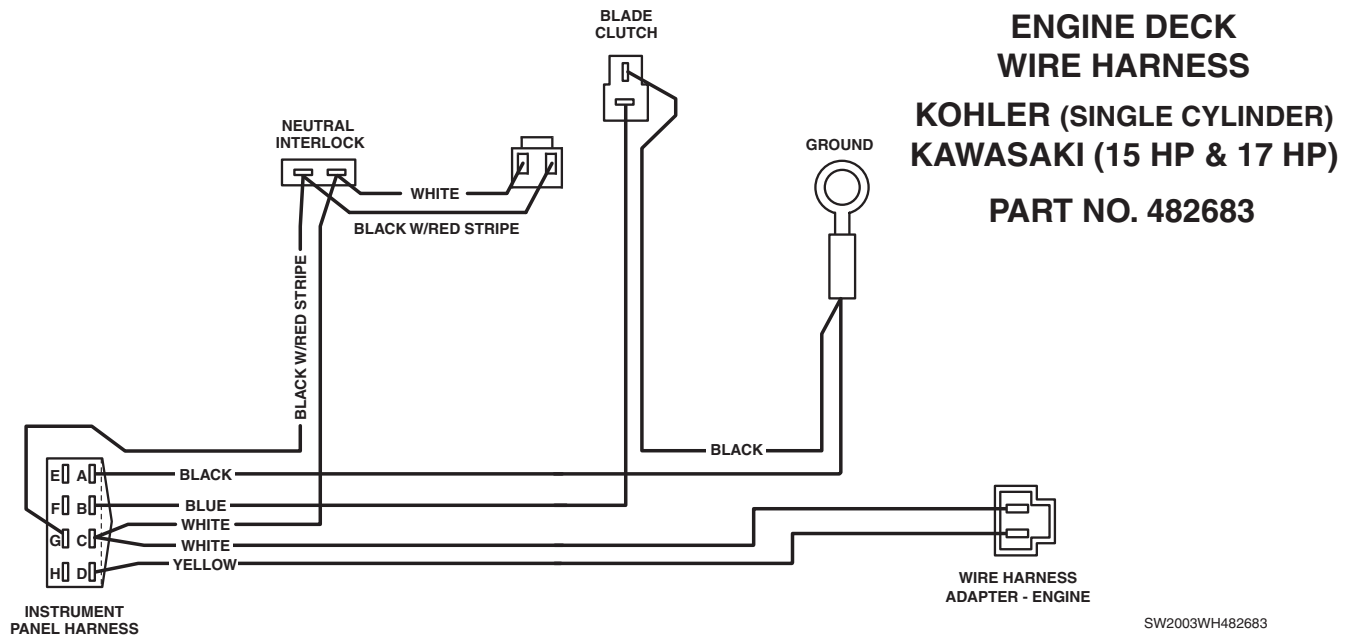
HYDRAULIC PUMP ASSEMBLY



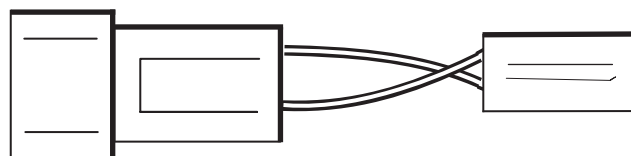
SC165G

HYDRAULIC PUMP ASSEMBLY

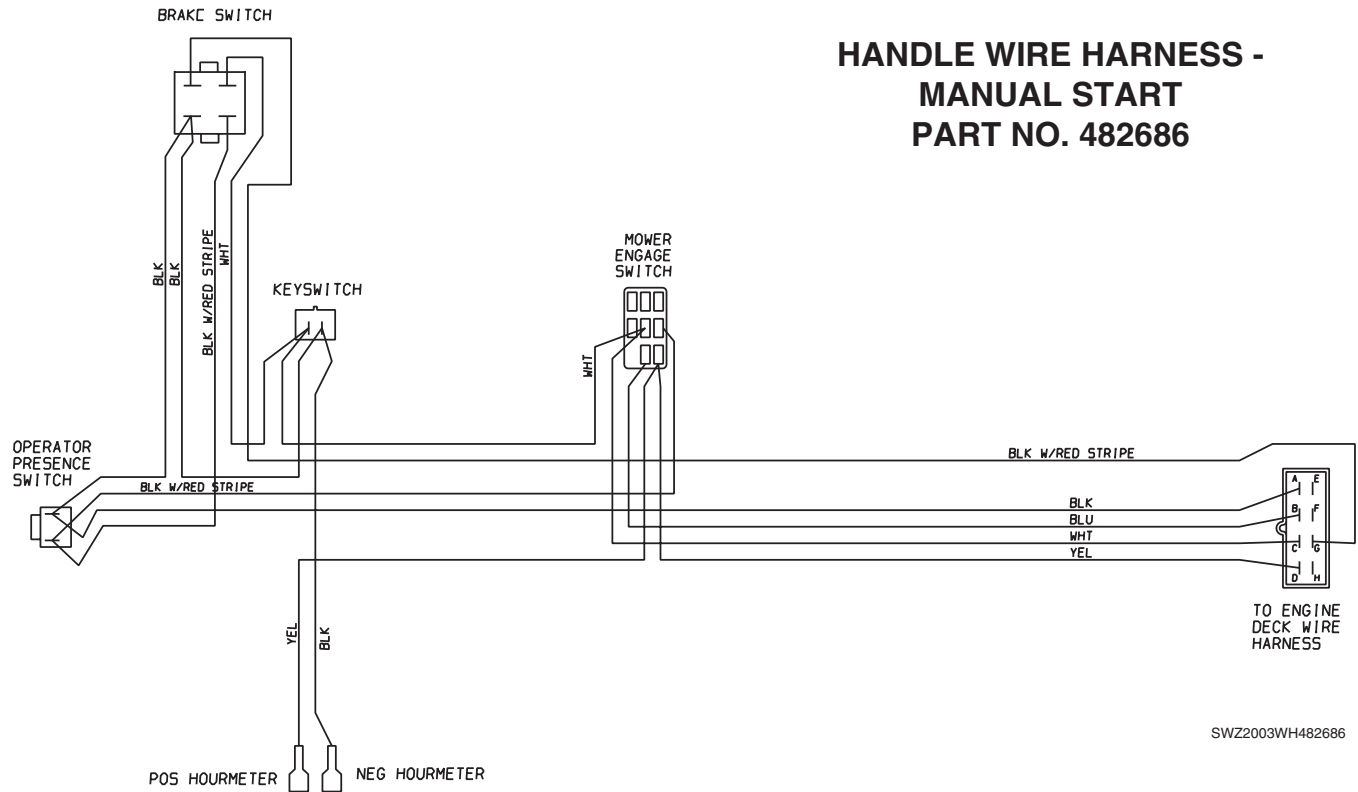
Ref. No.	Part Number	Description
1	HG 2513017	Housing Kit (Incl. Housing, Journal Bearing)
2	HG 2513016	End Cap
3	HG 9004800-2506	Straight Headless Pin
4	HG 9007314-0810	Socket Head Screw
5	HG 2003067	End Cap Gasket
6	HG 2513027	Charge Pump Kit (Incl. Charge Cover, Gerotor Assy., O-Ring)
7	HG 50273	Gerotor Assembly
8	HG 9004101-1340	O-Ring
9	HG 2510064	Charge Relief Valve Kit
10	HG 50095	Socket Head Screw
11	HG 2510027	Check Valve Kit (Incl. Check Plug, Spring, O-Ring, Orifice Check Valve)
12	HG 2513030	Bypass Valve Kit (Incl. Bypass Valve, O-Ring, Back-up Ring)
13	HG 9006110-0120	Backup Ring
14	HG 70079	Cylinder Block Kit
15	HG 2003014	Block Spring
16	HG 2003017	Block Thrust Washer
17	HG 2003044	Roller Thrust Bearing
18	HG 2003087	Swash Plate
19	HG 2003005	Trunnion Arm
20	HG 2000015	Guide Slot
21	HG 2003023	Cradle Bearing
22	HG 9008000-0126	Lip Seal
23	HG 2003020	Pump Shaft
24	HG 2003043	Ball Bearing
25	HG 2003016	Retaining Ring
26	HG 9008000-0128	Lip Seal
27	HG 2003052	Retaining Ring
28	HG 2003018	Spacer
29	HG 2513038	Shaft Kit (Incl. Pump Shaft, Ball Bearing, Retaining Ring)
30	HG 2513018	Overhaul Seal Kit (Incl. Gasket, Trunnion Seal, Input Shaft Seal, Charge Pump O-Ring)



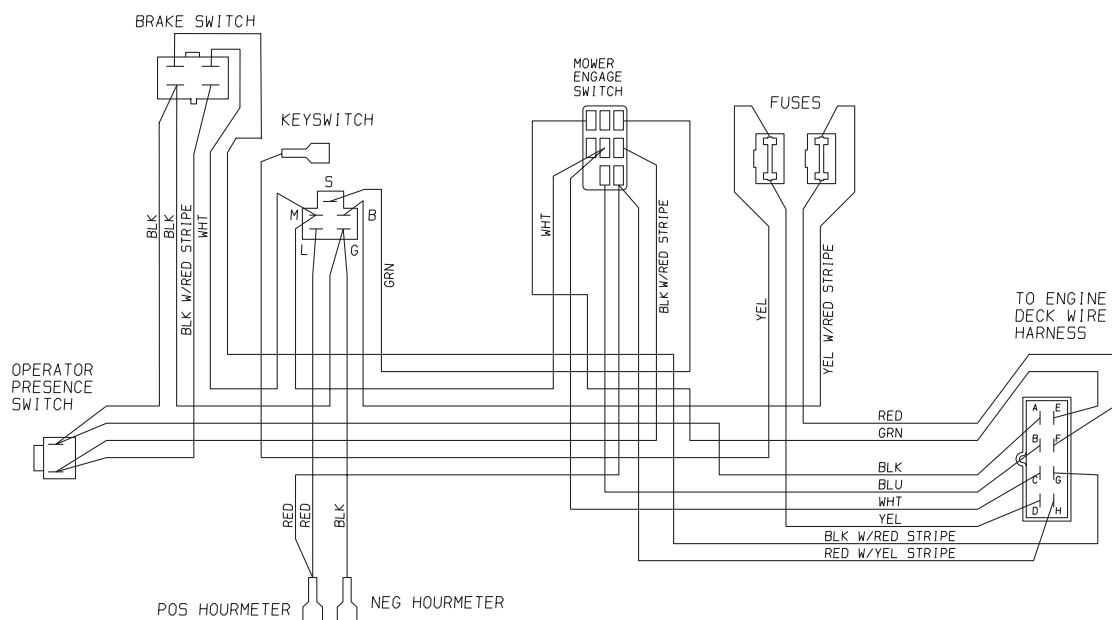
**WIRE HARNESS ADAPTER
KAWASAKI (15 HP & 17 HP)**
PART NO. 481717

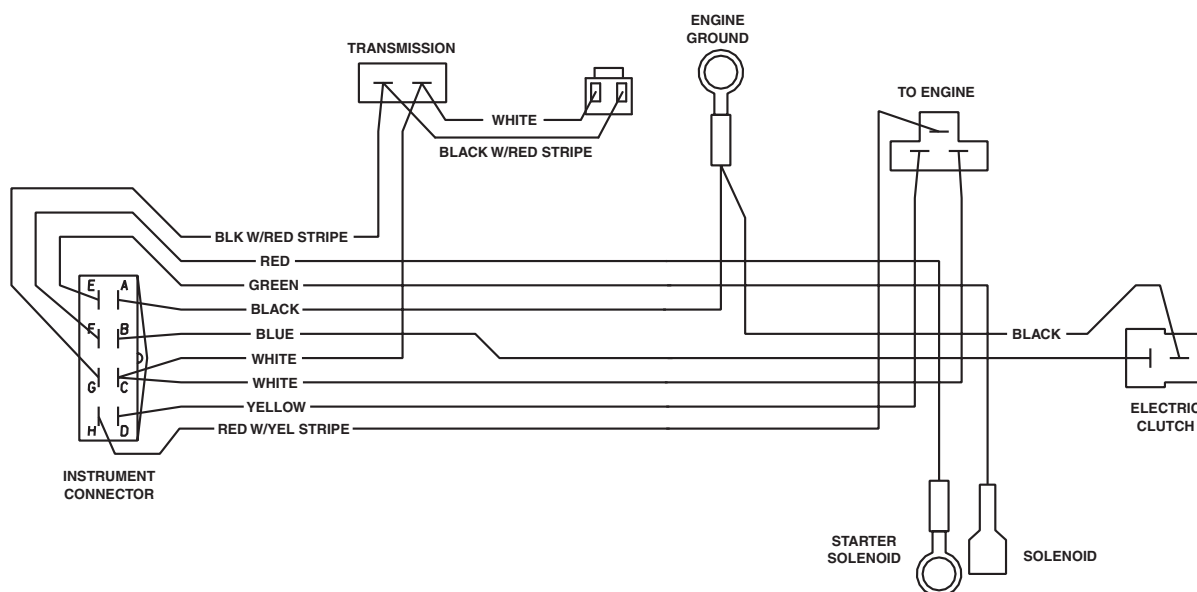


SW2003WH481717



HANDLE WIRING HARNESS KAWASAKI ELECTRIC START PART NO. 482687





ENGINE DECK WIRING HARNESS KAWASAKI ELECTRIC START PART NUMBER: 482685

REPLACEMENT DECALS & INFORMATION



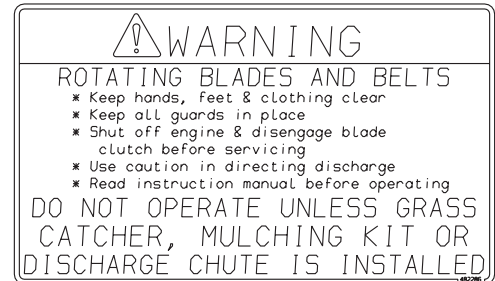
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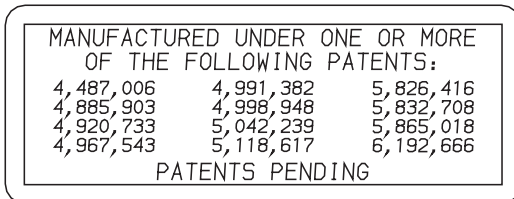
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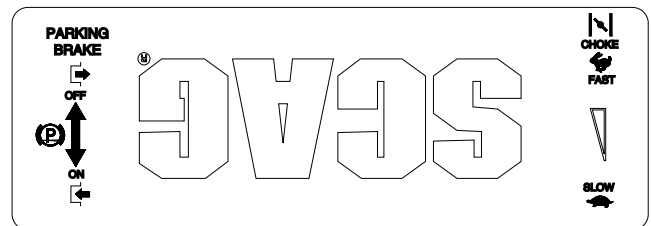
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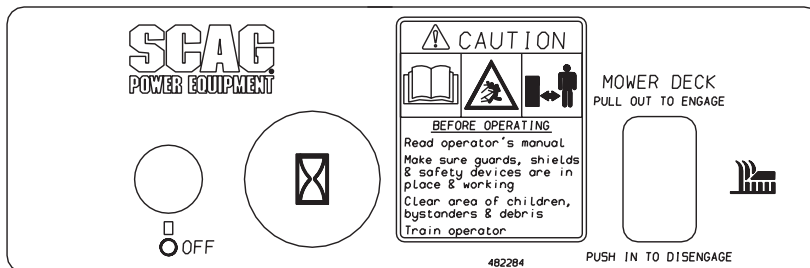
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48656



481414



482284



48404

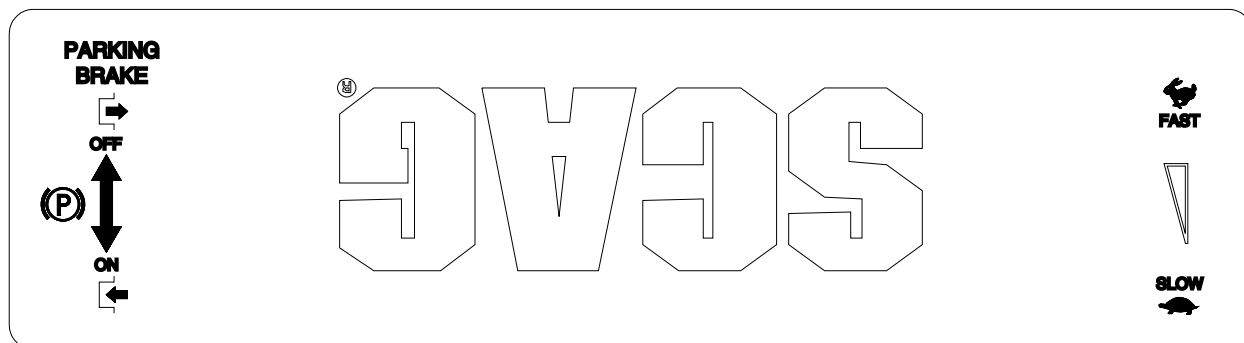


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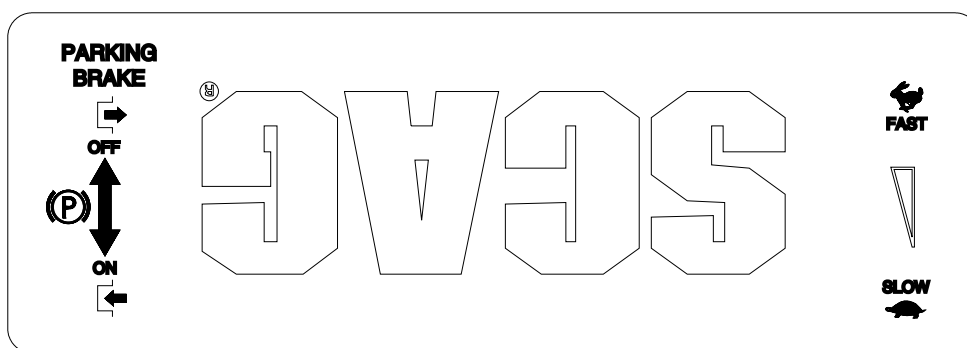


481039

REPLACEMENT DECALS & INFORMATION



481423



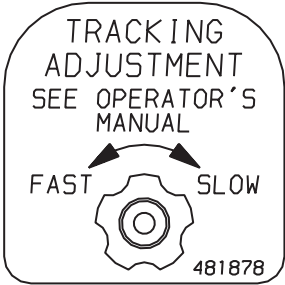
481438



36" - 482297
48" - 481953
52" - 481954
61" - 481955



481971



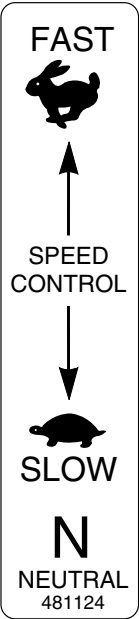
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481425



481942



481124

LIMITED WARRANTY - COMMERCIAL EQUIPMENT

Any part of the Scag commercial mower manufactured by Scag Power Equipment and found, in the reasonable judgment of Scag, to be defective in materials or workmanship, will be repaired or replaced by an Authorized Scag Service Dealer without charge for parts and labor. This warranty is limited to the original purchaser and is not transferable. Proof of purchase will be required by the dealer to substantiate any warranty claims. All warranty work must be performed by an Authorized Scag Service Dealer.

This warranty is limited to the following specified periods from the date of the original retail purchase for defects in materials or workmanship:

- * Wear items including drive belts, blades, hydraulic hoses and tires are warranted for ninety (90) days.
- * Batteries are covered for ninety (90) days.
- * Frame and structural components including oil reservoir, fittings, and oil coolers are warranted for 2 years (Parts and labor 1st year; Parts only 2nd year).
- * Cutter decks are warranted against cracking for a period of three (3) years. (Parts and labor 1st year; Parts only 2nd and 3rd year) The repair or replacement of the cutter deck will be at the option of Scag Power Equipment. We reserve the right to request components for evaluation. This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.
- * Engines and electric starters are covered by the engine manufacturer's warranty period.
- * Major drive system components are warranted for two (2) years by Scag Power Equipment. (Parts and labor 1st year; Parts only 2nd year) (Two year warranty exclude fittings, hoses, drive belts). The repair or replacement of the hydraulic pump or hydraulic motor will be at the option of Scag Power Equipment. This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.
- * Electric clutches have a Limited Warranty for 2 year (Parts and labor 1st year; Parts only 2nd year).
- * Cutter Spindle Assemblies 46631 have a Limited Warranty for three years (Parts and labor 1st year; Parts only 2nd and 3rd year).
- * Any Scag product used for rental purposes is covered by a 90 day warranty.

The Scag mower, including any defective part must be returned to an Authorized Scag Service Dealer within the warranty period. The expense of delivering the mower to the dealer for warranty work and the expense of returning it to the owner after repair will be paid for by the owner. Scag's responsibility is limited to making the required repairs and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any Scag mower.

This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual. The warranty does not apply to any damage to the mower that is the result of improper maintenance, or to any mower or parts that have not been assembled or installed as specified in the Operator's Manual and Assembly Manual. The warranty does not cover any mower that has been altered or modified, changing performance or durability. In addition, the warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the reasonable judgment of Scag, are either incompatible with the Scag mower or adversely affect its operation, performance or durability.

Scag Power Equipment reserves the right to change or improve the design of any mower without assuming any obligation to modify any mower previously manufactured. All other implied warranties are limited in duration to the two (2) year warranty period or ninety (90) days for mowers used for rental purpose. Accordingly, any such implied warranties including merchantability, fitness for a particular purpose, or otherwise, are disclaimed in their entirety after the expiration of the appropriate two year or ninety day warranty period. Scag's obligation under this warranty is strictly and exclusively limited to the repair or replacement of defective parts and Scag does not assume or authorize anyone to assume for them any other obligation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Scag assumes no responsibility for incidental, consequential or other damages including, but not limited to, expense for gasoline, expense of delivering the mower to an Authorized Scag Service Dealer and expense of returning it to the owner, mechanic's travel time, telephone or telegram charges, rental of a like product during the time warranty repairs are being performed, travel, loss or damage to personal property, loss of revenue, loss of use of the mower, loss of time or inconvenience. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

